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Plan Would Complete Lake Sulphite Plant

Proposal To Rehabilitate Lake Sulphite Pulp Co. At Red Rock Long In Receivership Would Include $4,000,000 New Capital and Issuance of 49 Per Cent of New Common Stock — Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 2, 1941—At a conference in Montreal during the past week consideration was given to what is described as the first practical proposal for dealing with the unfinished undertaking of the Lake Sulphite Pulp Company, Ltd., now in receivership. This company, which was organized some years before the outbreak of hostilities in Europe, established a mill at Red Rock, in the Thunder Bay District on the north shore of Lake Superior, but got into financial difficulties, with the result that construction was suspended pending reorganization.

Output 540,000 Pounds Daily

The plant is designed for a capacity of 540,000 lbs. per 24 hours of bleached sulphite pulp, cellulose for rayon, etc., and refined sulphite screening. The equipment is listed as including one 80-inch wet machine, one 168-inch Fourdrinier pulp drying machine, with Minton drier section and seven digesters.

The transaction now proposed, it was stated following the meeting, would involve the sale of assets to a new company which would be controlled by a group of Michigan paper mills. Under the terms of the proposal, it was added, the full capacity of the plant would be assured over a long period of years.

The proposed deal may be summarized as follows: Except for a small amount of cash to pay certain expenses of the receiver, Canadian claimants would be paid off entirely in junior securities which would include 49% of the new common stock to be issued. Approximately $4,000,000 new money would be required to complete the plant. On this basis the capital of the new company would amount to about $8,000,000.

Cooperation of Government Necessary

To make the transaction feasible, it was pointed out, the full-cooperation of the Dominion government, the Province of Ontario, and all those interested in the company is necessary. If the details can be worked out, construction should begin this summer and the plant should be placed in operation in June, 1942. Management of the new undertaking and technical direction would be under the guidance of the American mills. Canadians are offered equal representation on the board.

Negotiations have been conducted on behalf of the Canadian interests by Stanley Stanger, Montreal, and C. M. Keys, of New York.

Sweden Stops Production of Mechanical Pulp

A mail dispatch from Stockholm just received here quotes a review of the Swedish bank, Svenska Handelsbanken, as stating that while increased uses are being found for chemical pulp to counteract the loss of export markets outside the blockade area, production of mechanical pulp has ceased entirely. The dispatch says: "Owing to the conditions prevailing, increased uses are constantly being found for chemical pulp; large quantities of sulphate pulp are used in the making of, for instance, yarn paper alone. Fodder pulp is being supplied to the Swedish home market. So far 100,000 tons have been sold for this purpose, and new orders are expected. There is a good demand for rayon pulp."

To Control Prices in U. S. and Canada

Following a visit to Ottawa of representatives of the price control authorities in Washington, the possibility is reported that the next step in applying the principles of the Hyde Park declaration will be the joint control of general prices in the United States and Canada, to prevent any undue increase. "A complete integration of the price control fronts in both Canada and the United States" is the way the proposal is phrased.

John Hamm, who headed the delegation from Washington, said in a press interview that the following three factors were behind their visit:

1—To learn from Canadians how the controls were worked here to keep prices from rising and to guard against shortages of essential war materials.

2—To establish personal relations with the Canadian officials in charge of the controls so that they can at any time pick up a telephone and talk over any international matters without going through the slow formalities of making a diplomatic enquiry.

3—To survey the possibilities of co-ordinating projected steps in extending existing controls.

Wisconsin Mills Announce Wage Increases

Kimberly-Clark Corp. and Southern Kraft Corp. Grant Higher Wages To Hourly Workers—Work Week of Paper and Pulp Mills Now 42.6 Hours and Average Weekly Pay $27.66 — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 2, 1941—Wisconsin mills of the Kimberly-Clark Corporation and the Southern Kraft Corporation have granted wage increases to hourly workers, according to announcements made last week.

Kimberly-Clark workers were granted a wage boost of two cents per hour for women, three cents per hour for men on unskilled jobs, and four cents per hour on all other occupations for men. The increase took effect May 25, according to S. F. Shattuck, vice-president and head of the industrial relations department.

Collective bargaining sessions were held at the company's offices at Neenah, Wis., May 27 to 30 between representatives of management and the following unions: Paper Mill Workers Union, Kimberly, Wis.; Lakeview Independent Union, Neenah; Wall Paper Workers Union of the Fox River Valley (for the Atlas mill at Appleton, Wis.), and the Paper Workers Union, Niagara, Wis.

At the Continental division of the Southern Kraft Corporation, Marinette, Wis., all hourly paid employees will receive an increase of five cents per hour effective June 1. Hereafter all wage earners will receive a week's vacation with pay providing they have had two years' continuous employment with the company, the pay to be equivalent to two per cent of the employee's total earnings for the previous year. The company reserves the right to give vacation pay in lieu of actual vacation in the event it becomes impractical to plan scheduled vacation periods.

Institute of Paper Adds New Equipment

New possibilities of study and research in all fields of paper making and its affiliated branches have been made possible at the Institute of Paper Chemistry, Appleton, Wis., with the arrival of an electron microscope. The machine is the second of its kind made by the RCA Manufacturing Company.

The new microscope used a beam of electrons that travels at high velocity, and the beam of electrons is deviated and bent by magnetic fields in a manner analogous to refraction of light by lenses. It is capable of magnifications up to 30,000 diameters, and through further photographic enlargements, up to 100,000 diameters. It will be possible to see particles down to about 1/100 millionths of an inch.

Two operators are required to use the machine, one to prepare specimens and the other to observe and take photographs.

To Increase Power to Pulp Mills

Construction work was started last week by the Wisconsin Michigan Power Company, Appleton, Wis., on a new 33,000-volt transmission line eastward from Bonduel, Wis., to Oconto Falls, Wis., in order to provide additional power to pulp mills operating at capacity to fill the demand created by the lack of foreign pulp imports. The project will cost about $108,000 and will be completed by fall if there is no delay in delivery of materials. The company has not yet started work on a second project, the interconnection of its generating system at Green Bay, Wis., with that of the Wisconsin Public Service Corporation, to provide for emergency power demands.

Construction of a steam generating unit of 30,000 kilowatts is to be started soon by the Wisconsin Power and Light Company at Sheboygan, Wis. Authority has been granted by the Federal Securities Commission to sell $1,000,000 worth of unsecured 2¾ per cent notes to the Continental Illinois National Bank and Trust Company, Chicago, as a means of financing the project. The notes are to be repaid in five semi-annual installments beginning December 1, 1946.

Consolidated Erecting New Building

Practically all of the steel work is in place for the new building under construction by the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., to provide storage for four cranes and a locomotive. The building is located in the woodyard and is 85 by 75 feet in size. It is of brick and steel and will be completed about July 1.

Paper and Pulp Mills at Capacity

Because of large backlogs of orders, practically all of the Wisconsin paper and pulp mills kept up full operations over the Memorial Day weekend. Some of the converting plants were closed, but it was necessary to maintain production schedules in the mills to replenish fast dwindling stocks.

The employment trend continues upward, according to reports of the Wisconsin Industrial Commission. The number of workers in paper mills and allied industries jumped from 22,400 in March to 22,900 in April, a gain of 1.9 per cent. Employment is up 8.8 per cent from April a year ago, when there were 21,000 workers on the payrolls.

Estimated weekly payrolls of $530,000 in April, 1940, have jumped to $635,000 in April, 1941, a gain of 19.7 per cent. They totalled $624,000 in March, showing a gain of 1.8 per cent for April of this year.

The work week is now 42.6 hours average at an average rate of 65.2, or average weekly earnings of $27.77.

Converting industries also are stepping up production. In the Milwaukee metropolitan area, where many of these are located, there were 2,139 on the payrolls for April of this year, a gain of 7.2 per cent from March. Weekly payrolls are up 5.7 per cent for a total of $55,055, with a 40.9 hour week average at 62.9 cents per hour, or $25.74 per week.

Joseph M. Conway Presides at Meeting

Joseph M. Conway, president of the Hoberg Paper Mills, Inc., Green Bay, Wis., presided at the sessions of the annual meeting of the Wisconsin Manufacturers Association at Milwaukee, Wis., May 27. He served as president during the last year and is suc-

ceeded by W. D. James of Fort Atkinson, Wis. The convention was held in connection with the series of defense clinics being sponsored throughout the nation by the National Association of Manufacturers. A panel discussion was held on the new problems engendered by the defense program and labor relations.

Paper Mills Request More Power

Because of the need of additional power by the Thilmany Pulp and Paper Company and the Combined Locks Paper Company, the City of Kaukauna, Wis. has petitioned the Wisconsin Public Service Commission for permission to install a second hydroelectric power unit at its new municipal utility plant on the site of the former Patten Paper Company mill. H. F. Weckwerth, manager of the utility, declared that the load on the several generators is quite heavy and that the supply is short of present demands. The new unit will be a duplicate of one recently completed, and will cost about $180,000. It was stated that the new unit would be paid for within ten years.

Grode and Shattuck Nuptials

The marriage took place Monday morning, May 26, at St. Patrick's church, Menasha, Wis., of Miss Mary Jane Sensenbrenner and Carleton Grode, both of Menasha. The service was read by the Rev. J. J. Ahearn. Miss Sensenbrenner is the daughter of Mr. and Mrs. R. M. Sensenbrenner, and her father is vice-president and general manager of the George A. Whiting Paper Company, Menasha. Mr. Grode is associated with the Menasha Products division of the Marathon Paper Mills Company, Menasha.

James Shattuck of Neenah, Wis., will be married June 18 to Miss Martha Merrill of Cambridge, Mass., according to announcement made last week. Mr. Shattuck is a son of Mr. and Mrs. S. F. Shattuck, Neenah, his father being vice-president of Kimberly-Clark Corporation. He is completing his studies at Tufts college in the east, after attending Yale University.

To Reopen Indiana Mill

HARTFORD CITY, Ind., June 2, 1941—The Southern Kraft Corporation, owner of a paper mill here which has been closed, today announced the plant would be reopened as soon as arrangements can be made. It will operate for an indefinite period, and will employ between 100 and 125 men. Many of the men to be employed are those who worked in the mill prior to its closing. It was owned before that time by the Fort Wayne Corrugated Paper Company, which sold it to Southern Kraft.

A number of men who formerly worked in the mill and have moved elsewhere have been sent word to return to the plant here, if they so desire.

The Fort Wayne Corrugated Company, when the sale was made three years ago, retained the box board plant and has operated it since.

Most Boston Houses to Close Saturdays

BOSTON, Mass., June 2, 1941—At a meeting of the New England Paper Merchants Association May 27 the majority of fine paper houses agreed to close all day on Saturdays from June 21 to August 30, inclusive.

To Build Plant for Alpha Cellulose

MINNEAPOLIS, Minn., June 2, 1941—Construction of a "pilot plant" to begin commercial production on a small scale of alpha cellulose, basic raw material for the manufacture of rayon, munitions, celluloid, plastics and similar products, was announced last week by the Northwest Research Foundation. After seven years of successful laboratory research by the University of Minnesota in the utilization of aspen wood, the foundation concluded an agreement with the Minnesota and Ontario Paper Company for the construction of the "test" mill at International Falls, home of the company's paper and pulp operations on the Canadian border.

Work on the "pilot plant" will start immediately, R. H. M. Robinson, president of the M. and O., said. "We hope to have it completed within three to six months. At the end of that time, manufacture on a small scale of alpha cellulose will begin and present plans call for the production of approximately 500 pounds of the cellulose pulp a day."

The pilot plant will be constructed at the expense of the M. and O. Paper Company and will be used for the manufacture of the product on a miniature scale to prove to the great chemical firms of the country that this vital "raw material" can be furnished to them in an uninterrupted supply. Professors Lloyd H. Reyerson and R. E. Montanna of the University of Minnesota chemistry department were in charge of the laboratory research.

Selection of the Minnesota and Ontario Paper Company to conduct further research was made by the foundation, on account of the location of the M. and O. mills in the center of the aspen forest supply and because of the availability of the water supply of the Rainy River water shed on the Canadian border, as water is a big factor in the manufacturing process.

One of the interesting features of this process is the by-products which can be recovered, including acetic and oxalic acids.

The Northwest Research Foundation was organized by civic-minded men in 1933, with the sole purpose of developing natural resources of the state. The laboratory work on the development of alpha cellulose marks the completion of the first major step in its history. Other projects are also underway. State-wide in scope, its officers are, James G. Bennett, Minneapolis, president; Valentine Wurtele, Minneapolis, and Warren Moore, Duluth, vice presidents; David R. West, Minneapolis, treasurer, and A. C. Godward, Minneapolis, secretary.

Oxford New Wage Scale Agreed On

RUMFORD, Me., May 30, 1941—The Oxford Paper Company's 2100 employees today accepted a new contract providing for one week's vacation with pay after a year's service and plant-wide, five-cent hourly wage increase, effective June 1.

The new agreement, the result of annual wage negotiations between the company and two AFL unions, local 26, Pulp, Sulphite and Paper Mill Workers, and local 22, International Brotherhood of Paper Makers, also provided for a company fund of $29,000 for adjustment of wage rates.

Theodore F. Spear, the general manager, said the fund would be used to adjust compensation for some jobs.

Strong and Stable Paper Market in Midwest

Kraft Paper Demand Continues At High Level In Chicago With Book and Bond Lines Very Strong—Salesmen Hold "Courtney Reeves Day" Outing—Printing Paper Exhibit Opens—Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 26, 1941—With book and bond papers advanced $10 a ton in recent weeks and ground wood specialties advanced $5 a ton, the local paper market is ready to go into the summer months in a sound position. Mills in general are reported from 8 to 10 weeks behind but the development is orderly and there are obvious indications that the paper industry is doing a good job of policing itself mindful of the dangers of governmental regulation of price structure. The reported actions of major kraft paper manufacturers in indicating a willingness to retain kraft prices at present levels for the remainder of the year were expected to have a helpful effect in maintaining this position.

Krafts continued very strong. Newsprints were firm with orders plentiful and with prospects of more stiffening in evidence. Newsprint offices here reported favorable conditions. Books and covers were strong while the bond list in general showed plenty of strength. But even while facing the new demand with satisfaction, local paper executives were looking ahead to further heavy taxes and regulations as a "stabilizer" for over-exuberance. These added operating expenses plus improved demand and curtailment of raw material markets were all expected to weigh heavily later in the year in forcing higher prices into being.

Printing Exhibit Opens

The Chicago paper industry is evidencing a lot of interest in the 15th annual Chicago exhibition of design and printing which opened on May 22 and which will continue through June and July. The exhibits will be at the Newberry Library. The exhibits were opened on May 22 with an address by Mr. G. P. Farrar, nationally known as a speaker and writer on typographic subjects. His subject, "The Colorful March of Progress in Printing Design" was a proper keynote for the colorful displays at the Library. Almost every conceivable type of printed matter is included in the huge display with the exhibits containing a description of the use of the printed piece, name of client and designer, composition, type faces and paper used. This year, more than ever before, it is reported that specific attention is being paid to the quality, performance and appeal of the paper itself. One hundred and fifty pieces are in the exhibits to be judged by a jury composed of C. H. Magers, art director of Montgomery Ward & Company; Phillip Reed, Designer, the Monastery Hill Press and John D. Schneider, John Dickinson Schneider Company.

Salesmen Hold "Courtney Reeves Day"

Blessed with crisp, cool weather, some fifty members of the midwest division of the Salesmen Association of the Paper Industry pried open the 1941 golf season this Friday, May 23 with a tournament at the sporty and picturesque Sunset Ridge Country Club on Chicago's north side. Under the leadership of Ed Rolaine of the Mosinee Paper Mills, the salesmen and their guests enjoyed luncheon, an afternoon of golf and the general good fellowship always engendered at the evening dinner affairs at which the prizes for the afternoon's play are awarded. The initial outing is to be known as "Courtney Reeves Day" in honor of the popular head of the Association. Subsequent outings are also to be used to honor various executives of the Association.

Chicago Loses Good Salesman

Chicago is soon to lose a good paper salesman and all around good fellow and LaGrange, Illinois, is to lose a substantial citizen as Jack Burrus takes up his new duties as sales manager of the Crossett Paper Mills in Crossett, Arkansas. Jack is moving to the Arkansas city at once. As western sales manager of the Albermarle Paper Manufacturing Company, Mr. Burrus is widely and favorably known not only among the trade but among his own associates in the industry. He was western chairman of the Salesmens Association of the Paper Industry for one year and later became president of the national body during 1938-1939. R. W. Banks, associated with Mr. Burruss in the Chicago offices of Albermarle for the past eight years, will succeed the latter as western manager of the Albermarle sales office located in the Daily News Building.

Paper Men Plan Trip to Wawasee

Many Chicago paper executives are planning the trip to Lake Wawasee on June 5, 6 and 7 to participate in the annual meeting of the Paper and Twine Club. The Indiana resort has always held a genuine fascination for Chicago members and Secretary John Richey is rightfully expecting a large attendance inasmuch as the Paper and Twine program is to be augmented by the quarterly meeting of the Middle States Wrapping Paper Association which will combine manufacturers and jobbers to make for a very impressive gathering. Golf tournaments and other entertainment will be sandwiched in between important business meetings to make the three day event a combination of business and pleasure.

Paper Man Does Legislative Job

Corwine Roach, head of the Capitol City Paper Company of Springfield, Illinois, and active in many paper association affairs, is doing a most commendable job of handling the legislative program of the Illinois Chamber of Commerce according to reports from the statewide organization. The State Chamber maintains legislative headquarters in Springfield and is utilizing Mr. Roach's experience and acquaintanceship in a very effective way to promote a sound legislative program of real help to Illinois business. The Chamber, through Mr. Roach's activity, is combating a measure recently introduced to apply a capital stock tax on all foreign corporations operating in this State.

New Excess Profit Tax Ruling Analyzed

Declaration By Board of Referees That Canadian Newsprint Industry Is A "Depressed Industry" May Exempt Some Newsprint Concerns From Excess Profits Tax — Capital Changes Important.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 2, 1941—Analyzing the effect of the new ruling by the Board of Referees under the Excess Profits Tax Act declaring the newsprint industry a "depressed" industry, the *Financial Post* has worked out a few examples of how the new ruling might apply, and while admitting that the figures used are only approximations, claims they are indicative of what the ruling could mean for a few companies, and that large savings may result for some of them.

Effect of Classification Not Clear

Under the Excess Profits Tax Act the Board of Referees may declare an industry to be a "depressed" industry and proceed to set a standard rate of profit for that industry for Excess Profits Tax Act purposes, and all profits over and above that standard are then subject to a tax of 75%. The *Financial Post* points out that the full effect of the "depressed industry" classification is not yet clear because, according to the Act itself manufacturers in an industry declared "depressed" are permitted a "standard profit" of 5% minimum to a maximum of 10% on their productive capital, but according to a ruling of the National Revenue Department, companies are required to estimate their own "standard profit" by calculating the return on invested capital at 7½%, making their tax returns on this basis without waiting for rulings from the "depressed industries board."

Tax Returns Made on Estimated Bases

Actually most of the newsprint companies will have made their tax returns on an estimated basis and most of them for which annual reports for 1940 are available, used the minimum figure basis. According to the Post, this would mean the regular corporation income tax rate of 18%, or 20% for consolidated returns, plus 12% as excess profits tax, or a total of 30% for federal taxation alone, to which, in some cases, provincial taxes would have to be added.

The 1941 amendments to the Excess Profits Tax Act raise the minimum rate to 22%, a rise of 10%, but this only applies to earnings accruing after Jan. 1, 1941.

Presumably, the Board of Referees will, all in good time, inform each individual company what the Board considers its "standard profit" should be and the difference between that figure and the figure used by the company in estimating its taxes, used to adjust the final amount payable by the company.

"Standard Profit" Hard to Define

Considerable difficulty will be experienced in determining the "standard profit" for individual companies on the basis of invested capital and this makes it difficult to appraise what the general ruling may mean in relief for particular companies. For instance, it would be necessary to know what the permitted value of productive capital is to be. The best measure generally available will be balance sheet values. It would also be necessary to know what the permitted percentage rate of return on the productive capital is to be. If 10% is to be allowed, the resulting "standard profit" would, of course, be double that available if only 5% were permitted.

The *Financial Post* uses the following illustration of how the new ruling might apply:

	Standard Profit On 1936-39 average earnings basis	Based on 7½% return on capital
St. Lawrence Paper	131,000	1,125,000
Great Lakes Paper	257,000	577,500
Donnacona Paper	21,000	160,000

Capital Changes Are Important Factors

Changes in capital through re-organization or for other reasons have been so common in this industry that a wide range of examples is hard to find. Assuming that these figures are indicative of the change in "standard profits", then it may be roughly calculated that the higher "standard profit" means that the amount of earnings by which this base exceeds actual average for the years 1936-39 will be exempt from excess profits tax. For St. Lawrence Paper it would mean at least 12% on just under $1 million for last year and 22% for 1941. For Great Lakes Paper it would mean no excess profits tax on $320,000 and for Donnacona Paper an additional $140,000 exempt from excess profits tax.

Moore & Thompson Grant Increase

BELLOWS FALLS, Vt., June 2, 1941—A one-day strike of 160 employees of the Moore & Thompson Paper Mill Company was settled last week with the strikers winning their demand for a six-cent-an-hour wage increase.

David Mazer, official of the Hudson Pulp and Paper Corporation, New York, owner of the mill, announced the settlement after a conference with a workers' committee. The present wage scale at the mill ranges from 42 to 74 cents an hour.

A. V. Howland Heads Exhibits Committee

BOSTON, Mass., June 2, 1941—A. V. Howland, vice-president and assistant treasurer of Tileston & Hollingsworth and treasurer of the Advertising Federation of America, was chairman of the exhibit committee of the Advertising Federation of America, in connection with the 27th annual convention of that body, held at the Hotel Statler last week.

Install New Equipment

The Beach & Arthur Paper Company, Paperville, Pa., are now installing new sheeting and trimming equipment to supply their paper in sheets as well as in rolls. It is expected that the new equipment will be in operation on June 10.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 4, 1941—R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 199,000 pounds of 38 x 45 supercalendered book paper at 5.65 cents. The same firm will also furnish 80,700 pounds of same 38 x 48 269 pounds, at 5.65 cents and 259,500 pounds of same, 173 pounds at 5.93 cents. Bids for these items were received on May 14.

Butler Company will furnish 92,820 pounds of 40½ x 42, 25% rag, white bond paper at 10.2141 cents, bids for which were received on May 13.

Paper Corporation of U. S., will furnish 30,000 pounds of 25 x 38 brown calendered tag board and 30,000 pounds of same 20 x 25 at 8.95 cents, bids for which were received on May 12.

Butler Company will also furnish 45,384 pounds of 50% rag, No. 14 white manifold paper at 19.83 cents, bids for which were received on May 9.

Stanford Paper Company will furnish 11,850 pounds of 50% rag, 36 x 44 lithograph finish map paper at 11 cents and the same firm will also furnish 80,850 pounds of same 36 x 50 at 11.4 cents, bids for which were received on May 7.

Stanford Paper Company will also furnish 178,024 pounds of 42 x 64 white sulphite writing paper at 7.5 cents and the Marquette Paper Company will furnish 86,710 pounds of the same 48½ x 70 at 6.72 cents. Cauthorne Paper Company will furnish 37,058 pounds of 48½ x 73½ yellow sulphite writing papper at 7.25 cents and the same firm will also furnish 18,669 pounds of same blue at 7.25 cents. Butler Company will furnish 10,490 pounds of 25% rag, 28 x 42 white ledger paper at 10.68 cents and Mudge Paper Company will furnish 11,143 pounds of 50% rag, 22¾ x 34 white ledger paper at 11.25 cents. Eastern Corporation will furnish 61,000 pounds of 28 x 34 white sulphite writing paper at 6.64 cents. Same firm will also furnish 40,000 pounds of white sulphite writing paper in 25½ inch rolls at 6.06 cents. Bids for all of these items were received on May 5.

Barton, Duer & Koch Paper Company will furnish 173 sheets of 24 x 36 light blue cloth lined paper at $15.30 per C sheets. Mudge Paper Company will furnish 6,050 sheets of 19 x 28 brown cloth lined paper at $88.79 per M sheets. Mathers-Lamm Paper Company will furnish 15,000 pounds of 25 x 34 hard rolled binders board. Bids for these items were received on May 2.

Mudge Paper Company will furnish 48,000 pounds of 38 x 50 supercalendered book paper at 5.5 cents, bids for which were received on April 30.

Paper Bids Received

Printing Office has received the following bids for 2,000 pounds of 100% rag, 22 x 34 and 32 x 42 white bond paper; R. P. Andrews Paper Company, at $28.35 and $25.48 per M sheets; and Mudge Paper Company, 28 cents.

For 42,150 pounds of 50% rag, litho finish map paper; R. P. Andrews Paper Company, 12.69 cents; and Stanford Paper Company, 11.36 cents.

For 36,750 pounds of 26 x 32 offset paper; R. P. Andrews Paper Company, 7.8 cents; Maxwell Paper Company, 7.12 cents; and Aetna Paper Company, 7.22 cents.

For 32,000 pounds of 25% rag, 19 x 24 white blotting paper; Cauthorne Paper Company, 7.66 cents; R. P. Andrews Paper Company, 7.53 cents; Barton, Duer & Koch Paper Company, 7.54 cents; Stanford Paper Company, 6.85 cents; Virginia Paper Company, 8 cents; Old Dominion Paper Company, 7.989 cents; Mudge Paper Company, 7.91 cents; Butler Company, 6.9 cents; and Whitaker Paper Company, 6.9 cents.

For 41,600 pounds of 25% rag, 34 x 44 white bond paper; Stanford Paper Company, 14.25 cents; Aetna Paper Company, 11.72 cents; and Whitaker Paper Company, 13 cents.

For 780 pounds of buff antique cover paper; R. P. Andrews Paper Company, 15.5 cents; and Barton, Duer & Koch Paper Company, 18.5 cents.

Speaker at Graphic Arts Luncheon

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 2, 1941—Laurance S. Wright, sales promotion and advertising manager for Bird & Son, Inc., East Walpole, Mass., was a speaker at a luncheon on the Graphic Arts Institute held at the Hotel Statler May 27 in connection with the 27th Annual Convention of the Advertising Federation of America.

"Advertising is one part of distribution," Mr. Wright said, "but printing is tremendously important to advertising. The importance of printing to advertising is almost exactly equal to the importance which the representatives of the graphic arts group make it."

Robert Newcomb, of New York, editor of *Stet* for the Champion Paper and Fibre Company, presided at the house magazine conference held in connection with the Federation Convention.

To Supervise Howard Office

The western sales for the mills of the Howard Allied Mills will henceforth be under the supervision of E. J. Edwards, newly appointed western sales manager, according to an announcement made this week. Mr. Edwards will succeed Fred P. Whitely, veteran sales executive whose recent death was a real shock to Chicago paper trade. Mr. Edwards will represent the Aetna Paper Mills; Howard Paper Mills; Dayton Envelope Company and the Maxwell Paper Mills, all affiliates of the Howard Allied Mills organization. Mr. Edwards has been head of the Howard promotion and advertising divisions and is intimately acquainted with both the production and selling of Howard Products. He has, for some time, been assistant to Mr. Whiteley in this territory.

Go To Monadnock Paper Mills

BENNINGTON, N. H., May 26, 1941—Frank E. Davenport and Raymond C. McQuiston, both formerly with Knowlton Brothers at Watertown, N. Y., have joined the organization of the Monadnock Paper Mills in the manufacture of special and technical papers.

Obituary

John W. Graham

John W. Graham, 81, pioneer business man and civic leader and president of John W. Graham & Co., Spokane, Wash., died suddenly May 20 of a heart attack at his home, S607 Monroe street, Spokane. While Mr. Graham's health had suffered with a slight heart ailment for some months he was at his office almost daily.

Mr. Graham was born in Rockport, Ind., near where Abraham Lincoln spent several years as a young man. And from a wharf from which Lincoln worked as a flatboat man, Mr. Graham and his brother, James, set forth as boys on a flatboat merchandising trip down the Mississippi to New Orleans, his first venture in business.

Mr. Graham, lured by the west, came to Spokane in 1888, and entered the employ of Sylvester Heath in his stationery store. In August, 1889, the store was destroyed in the fire that razed Spokane. Mr. Heath did not wish to reenter business. Mr. Graham, receiving his permission to do so, established John W. Graham & Co. in a tent on the present site of the Touraine hotel.

Mr. Graham was a charter member of the Spokane City club, a director of the Chamber of Commerce, an Elk, a former member of the Spokane Country club and president of the Graham Realty company.

He is survived by his widow, Alta, the former Alta V. Burch, daughter of a pioneer doctor, and granddaughter of the Rev. Mr. Havermale for whom Havermale island was named. They were married here in 1897. Other survivors are a daughter, Molly Pattullo, two grandchildren, a niece, Eleanor, and a nephew, John B. Graham.

Charles M. Niezer

FORT WAYNE, Ind., May 26, 1941—Charles M. Niezer, 64 years old, president of the board of directors of the Hartford City Paper Company, and former University of Notre Dame athlete, died recently in a local hospital after an extended illness. He returned here from Florida several weeks ago to enter the hospital for treatment.

He was a member of the Indiana University board of trustees 16 years. He received his A. B. degree from Notre Dame, his LL.B. degree from Indiana University and an M.A. degree from Columbia University.

During the world war he served on the Allen County Council of Defense and was chairman of the home service section of the American Red Cross and director of war savings stamps and the Liberty loan campaigns. Mrs. Niezer died in 1927. Surviving are three children.

Capt. Frank L. Stevens

Capt. Frank L. Stevens, 76, of Hoosick Falls, N. Y., a prominent paper manufacturer in Rensselaer county for more than half a century, died last night at his home on May 19.

A native of North Hoosick, N. Y., Mr. Stevens was chairman of the board of directors of the Stevens & Thompson Paper Company which operates a plant in Greenwich, N. Y. and which formerly also operated plants in North Hoosick and Walloomsac, N. Y.

He served in the Spanish-American war with the New York National Guard and since his retirement from military service had been head of the Old Guard of Company M of Hoosick Falls. He was a Republican in politics and served as an assemblyman. He was postmaster of North Hoosick in 1890 and was identified with several banking enterprises.

Edward Nelson White

[FROM OUR REGULAR CORRESPONDENT]

Edward Nelson White, one of the founders of the White & Wyckoff Manufacturing Company, nationally known stationery manufacturer, and for 18 years trustee of Mount Holyoke College, died May 21 at his residence, 1190 Northampton street, Holyoke, Mass.

He was born in Claremont, N. H., July 6, 1863, the son of Jonas and Clarissa (Prentiss) White. When he was five years old, his family moved to Worcester where he was educated. He began his business career as an office boy at 17 at the Prentiss wire mills, Holyoke.

In 1889, he became junior partner in the firm of Smith & White, manufacturers of stationery. Two years later, with the late J. Lewis Wyckoff, he bought out the Smith interests and organized the White & Wyckoff Company. He had served as treasurer of the concern until his death. He served on the old Holyoke city council, was a member of the school board three years and a member of the planning board.

He leaves besides his widow, two daughters, Mrs. William H. Hubbard of this city and Mrs. Richard Glover of Port Hope, Ont., and one son, Edward P. White, assistant treasurer of the company. The funeral took place May 23.

Peter C. Servaas

Peter C. Servaas, 62, vice-president and sales manager of the Michigan Paper Company, Kalamazoo, Mich., died in Borgess Hospital after an illness of three weeks. He had been in failing health for three years. Mr. Servaas had resided in Kalamazoo 52 years.

Beginning his business career in the clothing business and later employed in the First National Bank, Mr. Servaas was associated with the Riverview Paper Company and then went to the sales department of the Bryant Paper Company, where he remained for 15 years, under the late Felix Pagenstesher. For the last 11 years he had been with the Michigan Paper Company.

Mr. Servaas was a past exalted ruler of the Elks of Kalamazoo and past district deputy grand exalted ruler.

Burial was in Kalamazoo, Mich.

Surviving are a daughter, Mrs. John Marshall of South Bend, Ind., a son, Richard, a law student at the Kent College of Law, Chicago, a granddaughter, and two brothers.

Salesmen Open Golf Season

The first golf outing of the Eastern Division of the Salesmen's Association of the Paper Industry, 122 East 42nd street, New York, will be held at the Innis Arden Golf Club, Old Greenwich, Conn., on June 11.

Plans for Superintendents' Meeting

Coated Paper Group Meeting

Dr. Frederick Frost of the S. D. Warren Company, Cumberland Mills, Me., chairman of the Coated Papers Group Meeting at the annual convention of the American Pulp and Paper Mill Superintendents Association to be held at the Poland Spring House, Poland Spring, Me., June 17-19, announces that:

Dr. B. Rowland, Research Laboratory, Institute of Paper Chemistry, Appleton, Wisconsin, will present a paper on "The Known and Unknown Various Coating Colors and their Relation to the Problem of Coating." This subject should be very interesting to all those making coated paper as it will take up some entirely new ideas on the subject.

Glen Price, National Starch Products, 15 Elkins street, Boston, Mass., will give a very timely paper on the "Type of Starches Available for Coating and their Characteristics." This should be of good interest to Coating Superintendents at the present time, due to the recent tremendous increase in Casein price. Mr. Price is going to describe enzyme conversion, thin boiling starches and oxidized starches. His paper will be illustrated by numerous charts showing relative strengths, viscosities, fluidities, and costs.

Ward Wheeler, Wheeler Calender Roll Company, Kalamazoo, Mich., is going to describe his experiments in using different types of fillers for calender rolls and will discuss their general relationships in nature of calender rolls and the characteristics they impart to paper.

Edwin Sutermeister, S. D. Warren Company, Cumberland Mills, Maine, is to give a paper on the problem of froth control and its relation to various variables in the Coating operation.

George Marsh, C. J. Merrill Company, Portland, Maine, has a very interesting story to tell on the problem of drying coated papers at speeds up to 1100 feet a minute.

Shipping and Storing Group Meeting

W. D. Sommerville of the Eastern Corporation, Bangor, Me., chairman of the Finishing, Storing and Shipping Group Meeting, plans to have an outstanding meeting.

J. G. Bucuss, sales manager Strapping Division, Acme Steel Company, 2840 Archer Avenue, Chicago, Ill., is going to present a paper on "The Bracing of Rolls, Skids and Bundles of Paper for Carload Shipment."

E. W. Spencer, assistant technical director, U. S. Government Printing Office, Washington, D. C., will deliver a paper on "Governmental Requirements for Packaging Paper."

R. A. Fasold, special representative, Freight Claim Division, Association of American Railroad, Chicago, Ill., is going to prepare a paper on the "Loading of Paper in Freight Cars for Shipment." He will talk from the Railroad Company's standpoint.

These three men are rather outstanding in their respective fields and are worthy of a good audience. They will bring material which should be of interest to every paper mill shipping paper. The Finishing, Storing and Shipping Meeting is scheduled for Thursday, June 19, at 9:15 A.M. and will run until 12:00 Noon.

Train-Bus Schedule to Poland Spring

FROM NEW YORK

State of Maine Express *Standard time*

Leaves New York

Weeknights .....8:00 P.M., Sat. only 9:00 P.M.

Arrives Portland

Weekdays .....5:43 A.M., Sun. only 6:20 A.M.

Change trains at Portland and connection train for Danville Jct.

Leave Portland

Weekdays .....6:05 A.M., Sunday 6:37 A.M.

Arrive Danville

Weekdays .....6:54 A.M., Sunday 7:19 A.M.

Hotel bus will meet the train at Danville Junction on Monday and Tuesday, June 16 and 17. Guests arriving on other days should notify the Hotel to meet the train on which they will arrive.

BUS SERVICE

The bus leaves the Eastland Hotel, Portland, Maine, at 8:45 A.M. and 5:15 P.M., daylight time, each day, arriving at Poland Spring about an hour later.

Indianapolis Demand Expands

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., June 2, 1941—Paper volume in virtually all lines continues to expand in this territory during the last week and prices showed a slight increase in most. There is, as yet, no indication of a runaway market, but the price increases since the beginning of the defense program have managed to keep pace with the average increase in other production costs. Credits are in the best condition they have been for years, but most houses are chary about granting new credits and every effort is being bent to keep them in line so when the inevitable letdown comes, the situation will not be as bad as it was in 1930 when thousands of uncollectable dollars were on the books.

By far the brightest picture in the book is that in demand for building papers and roofing. Volume is better than it was a year ago and is closely crowding that of 1929. It is being freely predicted that the volume will pass that of the so-called boom years before the season is ended. Prices show a gradual increase, but nothing spectacular.

Container factories are working almost to capacity with demand heavy and not all due to defense industry demand. The regular customers are increasing their orders and this increase coupled with that due directly to containers supplied defense industries accounts for the production. Demand for waxed containers has had a seasonal increase from the ice cream trade.

Virtually no change was seen last week in the paper stock or rag markets. Demand for some grades seemed to be good and prices are firm.

Paper Box Shipments Rise

Shipments into the New York metropolitan area reported by members of the Folding Paper Box Manufacturers' Association, Inc., aggregated $932,860 in April. Shipments in March amounted to $874,512 and in April last year were $787,587.

. . . but the teletype passes written words *IN NOTHING FLAT!*

THE split-second transfer of a relay baton is a pretty fast exchange. But by teletype you can exchange *messages* any distance, *instantly, in typewritten form!*

This modern communication method is geared to the swift tempo of American business. . . . *Fast,* it saves precious minutes when time is at stake. . . . *Sure,* it transmits every word in black and white, forestalls costly misunderstandings. . . . *Convenient,* its two-way contact permits easy exchange of thoughts between two or more distant points. Record carbons for routing and filing extend its efficiencies still further.

Perhaps yours is one of the progressive businesses already using Teletypewriter Service. Perhaps you can use it to even greater advantage than you are now doing. A check-up will tell. Call a Bell System representative through your local telephone office. He'll gladly help with this important survey.

BELL SYSTEM

TELETYPEWRITER SERVICE

CONSTRUCTION NEWS

Ransom, Pa.—The National Paper Corporation, which purchased the former mill of the Ransom Paper Company, Ransom, several months ago, has work under way on improvements in property and will place the plant in service in about 60 days. It is expected to provide facilities for employment of close to 50 men. Mill will be given over to the production of several kinds of paper stocks, including a division for the use of waste paper for conversion into pulp, to be used for service at the plant.

Neenah, Wis.—The Bergstrom Paper Company, manufacturer of book, catalog and other paper stocks, has superstructure under way for new addition to mill, recently referred to in these columns, consisting of a one-story structure, about 30 x 33 feet, to be used for storage and distributing service. Erection contract has been let to the Fluor Brothers Construction Company, 48 Otter street, Oshkosh, Wis., and a number of sub-contracts have been awarded, including structural steel to the Vulcan Manufacturing Company, Fond du Lac, Wis., and for roofing to the E. D. Chase Company, Oshkosh.

Rochester, N. Y.—The Defender Photo Supply Corporation, Driving Park avenue, manufacturer of processed photographic papers and other kindred products, has approved plans for new additions to plant, comprising two one-story structures, about 140 x 160 feet, and 70 x 110 feet, respectively, reported to cost close to $100,000, including equipment. Erection contract has been awarded to Frank G. Maggio & Bros., 374 Augustine street, Rochester, and work is scheduled to be placed under way at once.

York, Pa.—Fire recently damaged a warehouse building of the United Wall Paper Factories, Inc., Carlisle and Linden streets, manufacturer of wall paper stocks. No official estimate of loss has been announced, but is reported as slight.

Canton, Ohio—The Canton Corrugated Box Company, 2820 Winfield way, N.E., manufacturer of corrugated boxes and containers, has work in progress on new addition to plant, previously noted in these columns, and expects to complete erection during the summer. Structure will be one-story, 120 x 165 feet, and will be used for increased capacity. It is reported to cost over $75,000, including machinery. Dennis Steffy, Hartville, Ohio, has the general erection contract. Lorenz & Lorenz, Canton, are architects.

Brooklyn, N. Y.—The New York Blanking Corporation, 33 35th street, commercial paper products, paper cutting service, etc., has leased the ground floor in local building of the New York Dock Company, at 360 Furman street, and will occupy for expansion.

Meadville, Pa.—The American Viscose Corporation, Delaware Trust Building, Wilmington, Del., manufacturer of viscose rayon products, has asked bids for the construction of a new waste and sewage disposal plant at branch mill at Meadville, and will carry out work during the summer. It will be equipped for large capacity. Havens & Emerson, Leader Building, Cleveland, Ohio, are consulting engineers.

Los Angeles, Calif.—The Western Waxed Paper Company, Inc., 910 East 61st street, manufacturer of waxed and other processed paper stocks, will use new building, now in course of erection at plant, largely for storage and distribution, providing large expansion for that purpose. New structure will be one-story, 150 x 175 feet, and will cost close to $100,000, with equipment. Engineers, Ltd., 605 West Olympic boulevard, Los Angeles, has the general erection contract. Plans for building were prepared under supervision of engineering department of parent company, Crown-Zellerbach Corporation, at Port Angeles, Wash. Donald R. Warren, Architects' Building, Los Angeles, is local engineer in charge.

Milwaukee, Wis.—M. Shapiro has leased a building at 125 East Walnut street for paper storage and distribution service. The structure is owned by the Joseph Schlitz Brewing Company, 235 West Galena street, which has awarded contract to Edward Steigerwald & Sons, Inc., 5310 West State street, for remodeling and improving the building for early occupancy. Joseph Schier is company architect in charge.

St. Joseph, Mo.—The Western Tablet and Stationery Company, Eleventh street and Mitchell avenue, manufacturer of commercial and other paper products, writing tablets, etc., has awarded contract to the Sheffield Steel Corporation, Sheffield Station, Kansas City, Mo., for structural steel framing for proposed new addition to plant, recently referred to in these columns, and work on superstructure will be placed under way in near future. Structure will be six-story and basement, divided into two sections, 160 x 225 feet, and 54 x 140 feet, respectively, and is estimated to cost about $350,000, with equipment. It will provide for large increase in present output. General erection contract has been let to the Lehr Construction Company, Twenty-second and Frederick streets, St. Joseph. John S. Metcalf Company, 111 West Jackson boulevard, Chicago, Ill., is consulting engineer.

Los Angeles, Calif.—The Pioneer-Flintkote Company, 5500 South Alameda street, manufacturer of roofing papers, paper board and kindred stocks, has completed plans for new one and two-story building at plant, to be used primarily for laboratory service. It is reported to cost about $45,000, including equipment. General erection contract has been let to E. S. McKittrick Company, Inc., 7839 South Santa Fe avenue, Los Angeles, and superstructure will be placed in progress at once. John and Donald B. Parkinson, 433 South Spring street, Los Angeles, are architects. This supplements another addition to mill, now under way, recently referred to in these columns, consisting of a one-story structure, 225 x 314 feet, designed for storage, distribution and other operating service. It is estimated to cost approximately $100,000, with equipment. Myers Brothers, 5407 San Fernando road, West Los Angeles, are general contractors for erection. The same architects noted pre-

Leading paper mills in 34 countries have installed more than 2100 STONITE* Top Press and Smoothing Rolls. Experience favors STONITE. Why experiment?

* (Ebonite and Granulated Stone Composite U. S. Patent 1,787,890 Re. 18,111)

Stowe-Woodward

THE RUBBER ROLL SPECIALISTS

Newton Upper Falls, Mass.

pared plans. It is expected to have the building ready for occupancy during the summer.

West Hopkinton, N. H.—The Davis Paper Company, manufacturer of paper board, is building a one-story warehouse of brick construction, 80x180 feet. It is expected that the structure will be completed about August 1.

Long Island City, New York, N. Y.—The Pax Writing Paper Company, Inc., a new concern in the city, has leased a floor in local building at 36-32 Thirty-fourth street, and will occupy for new plant for paper-converting service. Company will take possession at once.

Toronto, Ont.—The Universal Paper Products, Ltd., Terminal Warehouse Building, has preliminary plans under way for new one-story plant on local site for the manufacture of a line of commercial paper goods, with storage and distributing facilities. It is reported to cost close to $60,000, with equipment.

Detroit, Mich.—Fire, recently, damaged a portion of mill of the Central Felt Company, 2626 John R street, Detroit. An official estimate of loss has not been announced. The damage will be replaced at early date.

Kimberly, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., manufacturer of writing, book and other paper stocks, has begun excavations for one-story addition to mill at Kimberly, previously referred to in these columns, and will proceed with superstructure at early date. It will be about 67 x 160 feet, and will be used for storage and distributing service.

I. P. C. Newsprint Prices Unchanged

R. J. Cullen, president of International Paper Company, today stated on June 2, that International's current domestic newsprint prices, which are now fixed through June, 1941, will be extended throughout the third quarter of this year at the present level.

Mr. Cullen said that while this price level, which has not been changed since before the war, will now be firm until October 1, 1941, the factor of increasing costs of manufacture and transportation is steadily becoming more of a problem.

Brazil Pulp Imports

Recently in the PAPER TRADE JOURNAL statistics were printed, regarding Brazilian imports of chemical pulp for the years 1939 and 1940 from the Department of Commerce, which were inaccurate. Revised statistics just at hand from the Department of Commerce state that the imports of wood pulp into Brazil for 1939 amounted to 84,481 metric tons and for 1940, 63,709 metric tons.

Canadian Technical Section Meeting

The summer meeting of the Technical Section of the Canadian Pulp and Paper Association will be held at the Seigniory Club, Montebello, P. Q., on June 19-21. The meeting will be devoted to a round table discussion of manufacturing problems. On Friday evening, June 19, R. S. Kellogg will talk on "The Newspaper of the Future." Members of TAPPI are invited to attend.

New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Niles M. Anderson, general superintendent, St. Regis Paper Company, Tacoma, Wash., a 1924 graduate of the University of Washington and formerly with the Columbia River Paper Mills, Vancouver, B. C.

Joseph E. Atchison, graduate student, Institute of Paper Chemistry, Appleton, Wis.

C. E. Brandon, graduate student, New York State College of Forestry, Syracuse, N. Y., a 1936 graduate of Defiance College and formerly with the Aetna Paper Company, Dayton, Ohio.

Wentworth Brown, mill manager, Brown Corporation, La Tuque, Quebec, a 1928 graduate of Williams College.

Albert E. Conklin, chief chemist, C. A. Reed Company, Williamsport, Pa., has been transferred from the Associate to the Active grade.

Gilbert K. Dickerman, technical director, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., a 1925 graduate of Princeton University.

Frederick H. Frost, superintendent, S. D. Warren Company, Cumberland Mills, Me., received his Ph.D. from the University of California.

Milton J. Gordon, student, New York State College of Forestry, Syracuse, N. Y.

Lawrence G. Harris, chief chemist, Vancouver Kraft Corporation, Ltd., Port Mellon, B. C., a 1933 graduate of the University of British Columbia and formerly with Pacific Mills Ltd., Ocean Falls, B. C.

H. M. Hartong, technical sales, Casein Company of America, Division of the Bordon Company, Bainbridge, N. Y., a 1930 graduate of Iowa State College and formerly with the Koppers Company, Kearny, N. J.

Kenneth D. Hay, student, Institute of Paper Chemistry, Appleton, Wis.

Orton F. Hutchinson, technical sales, Bulkley, Dunton Pulp Co., Inc., New York, N. Y., has been transferred from the Associate to the Active grade.

Thomas G. Mangan, mill manager, International Paper Company, Chisholm, Me., a 1916 graduate of the University of Maine.

Hoke Martin, sales engineer, Hercules Powder Company, Kalamazoo, Mich., a 1921 graduate of the University of North Carolina and formerly with the Mathieson Alkali Works, Charlotte, N. C.

Malcolm B. Pineo, process and development engineer, Scott Paper Company, Chester, Pa., has been transferred from the Associate to the Active grade.

J. L. Renehan, chemical engineer, Reynolds Research Corporation, South Kearny, N. J., a 1922 graduate of Tufts College and formerly with the Wortendyke Mfg. Company, Richmond, Va.

Lawrence M. Roberts, engineer, Research Corporation, Bound Brook, N. J., a 1922 graduate of Pennsylvania State College and formerly with the Wilmington Fibre Specialty Company, New Castle, Del.

T. W. Scheidt, chemist, St. Regis Paper Company, Panelyte Division, Trenton, N. J., graduated from the Temple University, Philadelphia, Pa.

W. Allan Schenck, student, Institute of Paper Chemistry, Appleton, Wis.

Sorg Co. Sells Properties

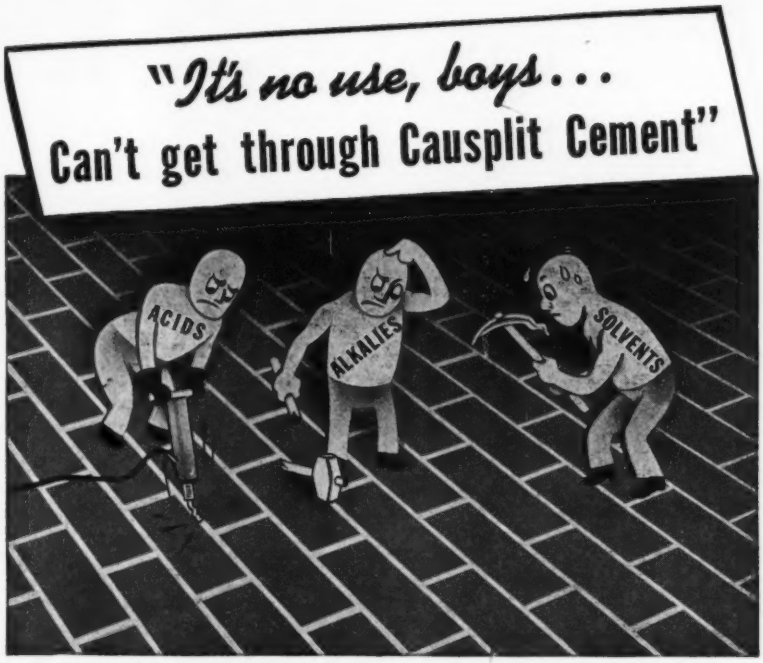
The Sorg Paper Company, Middletown, Ohio, recently concluded two real estate deals on properties of the company in Middletown, Ohio.

The building formerly occupied by the Advance Bag and Paper Company, Inc. on Broad street and subsequently used by the Sorg Company for its Superior-Lawrence Bag Division was leased to the United States Government for the headquarters of the Civilian Conservation Corp., Ohio-West Virginia District, Fifth Corp Area. This building comprising approximately 175,000 square feet of floor space will be used as a reclamation post and also as a supply depot for clothing, equipment and subsistence rations for the 110 CCC Camps in the Fifth Corp Area comprising Ohio, West Virginia, Kentucky and Indiana. It is also expected that supplies and equipment for Army Selectees will be distributed from this point. Present headquarters at Fort Hayes, Columbus, Ohio, have become inadequate necessitating the change to larger quarters. Over 200 persons will be employed, the majority of whom will be transferred from Columbus to Middletown.

The company also sold its building located on Grand Avenue in Middletown to the Interstate Folding Box Company, also of Middletown. This building, comprising approximately 118,000 square feet, was acquired in 1936 when Sorg purchased the assets of the Lawrence Bag Company. For a few months the Sorg Company operated its bag division in this building, but subsequently transferred the same to the Advance Bag Company building mentioned above.

Research Course

WASHINGTON, D. C., June 4, 1941—A training course for 12 research experts who will later be named regional business consultants in Commerce Department field offices will be conducted in June by the Bureau of Foreign and Domestic Commerce. To meet the growing need of business men for a better knowledge of economic regions of the United States, the 12 will devote much time to studying the collection of such information and its use for industry and commerce.



Its unique chemical resistance makes Causplit Cement a success where other cements fail. For Causplit readily handles a wide range of strong acids, alkalies and solvents at temperatures up to 350°F.

And Causplit is quick-setting, tough and durable, easy to apply, resistant to abrasion and to rapid changes in temperature. Proved admirable for corrosion-proof equipment lining in extensive industrial tests, Causplit Cement represents a considerable improvement over Penchlor Acid-Proof Cement and Asplit Cement, which have been successfully used in many industries for over 7 years.

CHEMICAL PLANTS profit by using Causplit because it resists hydrochloric, phosphoric and other strong acids, carbonates, sulfates and other salts, ammonia and various strong alkalies, phenol, toluol, alcohols, acetone and numerous other chemicals. Causplit Cement can be used in equipment handling alkalies and acids alternately—where other cements "wash out."

PAPER AND PULP MILLS find Causplit economical and durable for pulp digesters, bleaching system equipment, acid towers, recovery systems, etc. It withstands abrasion, repeated washings, sudden temperature changes, and chemicals used in the industry—including 50% caustic soda, soda ash, hypochlorites and chlorine, sulfurous acid, sodium sulfite, sodium sulfide, alum and others.

STEEL MILLS can use Causplit Cement for pickling, neutralizing and degreasing tanks and similar equipment because it is unaffected by sulfuric, hydrofluoric and hydrochloric acids, by strong alkalies, salts and solvents. Causplit maintains tight joints and preserves bricks, far outlasting other types of cement construction.

Wire or write today for FREE TEST KIT, including samples, booklet of information and test data showing Causplit's resistance to various acids, alkalies and solvents. Pennsylvania Salt Manufacturing Co., Widener Bldg., Philadelphia, Pa.—New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma.

PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending June 4, 1941

	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	24	23	23⅝
Celotex Corp.	9⅞	9¼	9⅝
Celotex Corp., pf.	69	67½	68¾
Certain-Teed Products Corp.	3¼	3	3⅛
Certain-Teed Products Corp., pf.	26½	24½	25¾
Champion Paper & Fibre Co.	19½	18¾	17½
Champion Paper & Fibre Co., pf.	104½	104¼	104½
Congoleum-Nairn Co.	15¼	14½	15¼
Container Corp. of America	13¾	13¼	13¾
Continental-Diamond Fibre Co.	7⅞	7⅞	7⅞
Crown-Zellerbach Co.	12⅛	11⅝	11⅞
Crown-Zellerbach Co., pf.	86½	84⅞	86½
Flintkote Co.	12⅝	12¼	12½
Robert Gair	1¾	1¼	1⅝
Robert Gair, pf.	9¼	8⅝	9¼
International Paper & Power Co.	14½	13⅞	14⅛
International Paper & Power, pf.	70¾	68⅜	70¼
Johns-Manville Corp.	58	57	58
Johns-Manville Corp., pf.	125½	125½	125½
Kimberly Clark Corp.	25½	25½	25½
MacAndrews & Forbes.	25½	25½	25½
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	19¾	19¼	19¾
Mead Corp.	7¾	7½	7½
Mead Corp., pf.	74¾	74¾	74¾
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	99	99	99
Rayonier, Inc.	12	11¾	12
Rayonier, Inc., pf.	24⅝	24	24⅝
Ruberoid Co.	16¼	15¾	16⅛
Scott Paper Co.	34¼	33¾	34⅝
Scott Paper Co., pf.	109¾	109	109¾
Sutherland Paper Co.	....	....	....
Union Bag & Paper Corp.	10⅜	10⅜	10⅜
United Paperboard Co.	3⅛	2¾	3⅛
U. S. Gypsum Co.	57½	56	56½
U. S. Gypsum Co., pf.	175	174½	174½

New York Curb Exchange

High, Low and Last for Week Ending June 4, 1941

	High	Low	Last
American Box Board Co.	4⅜	4¼	4⅜
Brown Co., pf.	13¼	13¼	13¼
Great Northern Paper Co.	38	36½	38
Hummel-Ross Fibre Corp.	....	....	....
National Container Corp.	10¾	10½	10½
St. Regis Paper Co.	1¾	1⅝	1¾
St. Regis Paper Co., pf.	90	87¾	90
Taggart Corp.	2⅜	2⅜	2⅜

Westminster Makes Good Report

Westminster Paper Company at New Westminster, B. C., is now engaged in an expansion program that will provide it with a fully modern mill, well equipped to meet the steadily rising requirements of the market, President J. J. Herb told shareholders in the annual report issued recently.

While sales again show an increase—totalling $1,243,801 compared with $1,208,506 in the previous year, taxation has reduced the profits. Net profit after providing for a $10,000 increase in taxation was $70,385, or $1.47 per common share. This compares with net profit of $142,027 in the preceding year, or $2.97 per share.

Drastic increases in the price of raw materials which could not be absorbed in our selling prices are given as the reason for the decline in profits.

The company has maintained a strong financial position. Despite retirement of the last instalment of the company's 6½ per cent first mortgage debentures on April 1, 1940, the company ended the fiscal year with net current and working assets at $263,252 which compares with $268,891 at January 31, 1940. Net additions to buildings, plant and equipment during the year amounted to $20,723, bringing total investment in buildings, wharves, machinery and equipment to $828,001, against which is a reserve for depreciation of $398,245. The company's leasehold is shown at $70,000 and patents and trade marks are carried at $75,496, bringing capital assets, after depreciation, to $575,252.

Of outstanding interest in the president's report is the announcement that work is in progress on a rebuilding and renovating program which will mean a big increase in output and further economies in operation. Covering the purchase of equipment for this expansion there is a notation in the balance sheet that the company had entered into contracts for the purchase during 1941 of machinery at a cost of approximately U. S. $75,000 and for this purpose had contracted to purchase U. S. $75,000 on May 15, 1941, at an exchange premium of 11⅝ per cent.

Consolidated Pays Interest

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 2, 1941—Announcement yesterday that directors of Consolidated Paper Corporation, at a meeting, determined to pay interest on the 5½% first mortgage bonds, due July 2, 1941, in cash, is of special interest because the wording of the 1936 agreement with the bondholders, which said: "If the company's working capital is in excess of $10,000,000 on April 30 next preceding the date on which interest is payable, interest is to be paid in cash to the extent of such excess, provided that no cash payment shall be less than 55 cents per $100 principal amount of bonds, any balance unpaid to be settled by issue of shares valued at $11 per share."

The above action by the directors indicates that working capital at April 30 last was $10,000,000, plus interest due. At the end of December, 1940, working capital was shown in the balance sheet at $7,479,261.

Bathurst Shows Progress

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 2, 1941—Demand for products of Bathurst Power and Paper Company, Ltd., has been running well ahead of a year ago, according to R. L. Weldon, president, in a statement going out with current dividend checks to class "A" stockholders. Mr. Weldon also stated that earnings, before making provision for Dominion and provincial income and excess profits taxes, showed some improvement over the corresponding period of last year.

Paper Group Securities Show Strength

TORONTO, Ont., June 2, 1941—Changes in the unlisted bond market during the month of May revealed that the paper group showed the greatest strength, with gains of up to four points, Abitibi's, at 68-70, were up this amount, and the C.D's rose 2½ points to 63½-65½. Brown Company 5½'s showed a gain of four points at 53-55. Consolidated Papers were up 2½ points at 66½-68½. M. and O. 5's were an exception, and lost 3½ points, being quoted 73-75.

Scott Paper Votes Dividends

The board of directors of the Scott Paper Company, at a meeting held May 22, 1941, declared the

regular quarterly dividend of $1.12½ per share on the company's outstanding $4.50 cumulative preferred shares, and the regular quarterly dividend of $1 per share on the company's outstanding $4.00 cumulative preferred shares, both such dividends to be payable August 1, 1941, to shareholders of record at the close of business July 19, 1941.

A quarterly dividend of forty-five cents per share on the company's outstanding common shares, payable June 14, 1941, to shareholders of record at the close of business on June 2, 1941, was also voted.

Dixie-Vortex Nets $1.95

The Dixie-Vortex Company and subsidiaries for the twelve months ended March 31, reports a net profit of $840,911, after Canadian excess profits taxes, equal, after dividend requirements on the Class A stock, to $1.95 each on 202,666 shares of common stock, compared with $858,385, or $2.03 a share, in the twelve months to March 31, 1940.

Ruberoid Votes Dividend

The Ruberoid Company has declared a payment of 50 cents a share on the common stock, payable June 27 to stockholders of record June 10. A disbursement of $1 was made on December 20, last.

Shares of S. D. Warren Up

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 2, 1941—Shares of the S. D. Warren Company were one of the features for strength in a generally irregular Boston stock market on May 28, advancing 1¼ to 29.

Ruberoid Elects Directors

Walter G. Cowan, of New York, and Louis Herscovitz, of Chicago, have been elected directors of Ruberoid Company, it was announced by Herbert Abraham, president.

Columbia River Earns $5.08

The Columbia River Paper Mills for 1940 reports a net income of $112,803, equal to $5.08 each on 20,000 shares of common stock, in contrast to net loss of $52,880 in 1939.

Oregon Pulp Profit Up

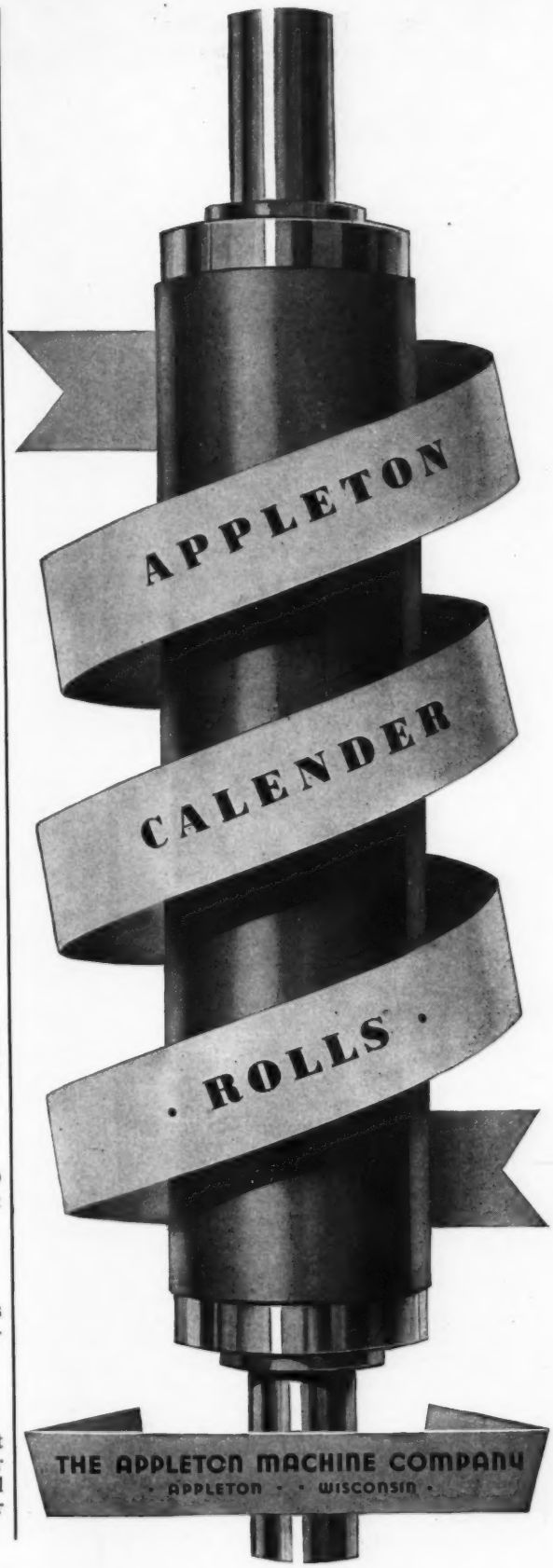
The Oregon Pulp and Paper Company for 1940 reports a net income of $291,978, contrasted with net loss of $21,816 in 1939.

Restigouche Nets $11,486

The Restigouche Company, Ltd. for 1940 reports a net income, in Canadian currency, of $11,486, contrasted with a net loss of $415,484 in 1939.

Rayonier Prices Unchanged

Rayonier Incorporated announces that its current prices for paper, specialty and dissolving pulps for South America, Mexico and the domestic market will remain unchanged for the third quarter of this year (July 1 to September 30, 1941).



Paper Board Men Meet

In well attended sessions, members of the National Paperboard Association met at The Homestead, Hot Springs, Virginia, on May 15 and 16, 1941. Chas. E. Nelson, president, Mac Sim Bar Paper Company, the president of the Association, presided at all sessions.

Unquestionably the most important subject discussed at the meeting was the National Defense program. As emphasized by President Nelson and many others, the matter of taking care of the Government's requirements, properly and promptly, is the most important duty confronting the paperboard industry at this time. It was stressed throughout the sessions that each member of the industry must put his shoulder to the wheel and do his full share.

Mr. Nelson paid a splendid tribute to H. W. Ellerson, a past president of the association, who died recently.

Albert W. Luhrs, technical consultant, Fibre Box Association, submitted a detailed report covering the use of paperboard and paperboard products in the defense program. Mr. Luhrs explained that he had been employed by the Fibre Box Association about seven months ago, to ascertain what could be accomplished in the way of having the government purchase specifications changed so as to permit the use of corrugated and solid fibre boxes. He explained in detail just what has been accomplished in supplying corrugated and solid fiber containers for the shipment of articles required in the defense program. He further explained that this demand is increasing and he stressed the urgent need for specially waterproofed container boards which will be required in increasing volume as the defense program gains momentum. Mr. Luhrs' presentation was most interesting and it met with hearty applause. All members pledged their full cooperation to produce boards of the grades needed and to make every effort to develop special types of board when and as required.

Grafton Whiting, statistician, reviewed the current statistics and charts, covering—(a) Days to Run; (b) Unfilled Orders; (c) Activity; (d) Production.

Overall paperboard production during the period January 1, 1941, to May 10, 1941, was reported as being 19.8% ahead of the same period in 1940.

Subdivided by grades, the percentage increases, this year to date, over the same period in 1940 were reported as follows:

Grade	% above 1940 January 1—May 10, 1941
Liners	26.4%
Corrugating Materials	27.0%
Chipboard	9.0%
Folding Boxboard	19.1%
Set-up Boxboard	16.0%
All Other	8.5%

Greene, Tweed & Co. Move

Greene, Tweed & Co. have removed to the Palmetto Building, 238th street and Bronx boulevard, New York City. In announcing the removal the concern states: "Our expanding business necessitated increased manufacturing facilities and, to maintain closer contact between factory and office, we have also moved our executive, sales and accounting offices to the same address. Formerly, we maintained our offices at 101 Park avenue, New York City and manufacturing plants in Brooklyn, New York and Newark, N. J. These will now all be concentrated under one roof which will enable us to serve your requirements even more promptly than heretofore."

Announces Kraft Board Prices

The Southern Kraft Corporation, 220 East 42nd street, New York, has sent the following announcement to its customers covering Fourdrinier kraft board prices for the remainder of the year.

"This is to advise that Southern Kraft Corporation's prices on Fourdrinier kraft board to contract customers on shipments starting July 1, 1941, through the month of December, 1941, will be on the basis of $60.00 per ton which is equivalent to the following prices per thousand square feet:

.009	Korrukraft—26 lb.	$0.78 per M. sq. ft.
.016	Liner—42 lb.	1.26 per M. sq. ft.
.016	Liner—47 lb.	1.41 per M. sq. ft.
.016	Liner—50 lb.	1.50 per M. sq. ft.
.016	Liner—52 lb.	1.56 per M. sq. ft.
.030	Liner—90 lb.	2.70 per M. sq. ft.

f.o.b. cars or vessel at our mill, freight allowed, 1% ten days, net thirty days.

"Under normal circumstances Southern Kraft believes that its established policy of quoting for quarterly periods is in the best interests of its customers. In quoting at this time prices for the balance of the year, it is with the understanding that this action will not set any precedent for the future.

"Quotations on special weights and grades of board can be made only on receipt of definite inquiries.

"This letter is not to be considered in any way as a binding obligation on our part to deliver any specific tonnage. Any such obligation can be undertaken only after the negotiation of definite tonnage commitments."

The corporation states that R. J. Cullen, in announcing this price, feels that it will tend to stabilize board and container levels, eliminating the tendency toward speculative purchases and excessive inventory buying.

Plan for N. A. W. M. D. Meeting

A release from the executive offices of the National Association of Waste Material Dealers, Inc. is to the effect that a large committee has now been appointed to make preparations for the association's fall convention to be held in San Francisco, October 11 to 14 inclusive.

H. L. Green will act as chairman of the committee and Governor Culbert L. Olson of California and Angelo J. Rossi, mayor of San Francisco, have accepted appointment as honorary chairmen. In addition there is a special advisory committee of which Walter G. Swanson, general manager of the San Francisco Convention & Tourist Bureau is a very active member. Marshall A. Shapiro will act as treasurer of the convention committee and David Golub of the Charles Harley Company will be chairman of the banquet committee. Abe Ferer of A. Ferer & Co. is chairman of a golf tournament committee. The golf tournament is to be held at Pebble Beach, one of the finest courses on the Pacific Coast.

The hostess committee will be headed by Mrs. Gladys Asher and there will also be a special Boosters Committee from Eastern and Southern sections of the country. This committee is made up of George Birkenstein, Chicago; David Charak, St. Louis; Sidney Danziger, New York City; Harry A. Keefe, Cleveland; Nathan Kurtz, Pittsburgh; Milton Levenson, Boston; Sam Rosen, New Orleans, and Lowell Thomas, Philadelphia.

U. S. Buys Paper

WASHINGTON, D. C., June 4, 1941—During the week ended May 17, the government bought $1,862,687.79 worth of paper under the Walsh-Healey act with the following orders:

$82,642.78 worth of target paper for War, Ordnance, Illinois, from the Newhouse Paper Company; $10,567.80 worth of map paper for Government Printing Office from the Stanford Paper Company; $13,351.80 worth of writing paper for Government Printing Office from the Stanford Paper Company; $19,614.91 worth of paper bags, wrapper, for War, Medical, Brooklyn, from L. Hyman & Sons; $14,035.50 worth of transparent paper for Boston Navy Yard from the Charles Bruning Company, Inc.; $59,768 worth of wiping paper for Bureau of Printing and Engraving from the Paper Corporation of U. S.; $11,720 worth of paper spit cups for War, Medical, Brooklyn, from the Stone & Forsyth Company; $16,730.90 worth of wrapping paper for War, QMC, Brooklyn, from W. L. Jones, Inc.; $89,191.10 worth of envelopes for Post Office, District of Columbia, from the Boston Envelope Company; $102,361.24 worth of envelopes for Post Office, District of Columbia, from the Commercial Envelope Company; $10,441.03 worth of envelopes for Post Office, District of Columbia, from the Tension Envelopes Company; $57,784.32 worth of envelopes for Post Office, District of Columbia, from the Transo Envelope Company; $760,048.30 worth of envelopes for Post Office, District of Columbia, from the Union Envelope Company; $292,638.78 worth of envelopes for Post Office, District of Columbia, from the U. S. Envelope Company; $16,948.65 worth of envelopes for Post Office, District of Columbia, from the Western Paper Goods Company; and $304,797.68 worth of envelopes for Post Office, District of Columbia, from the Oles Envelope Corporation.

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Simplified Practice for Box Board

The Division of Simplified Practice of the National Bureau of Standards, Department of Commerce, has announced that Simplified Practice Recommendation R44-36, Box Board Thicknesses, has been reaffirmed without change by the Standing Committee.

This recommendation was first promulgated in 1925 and was revised in 1936. It is of direct interest to manufacturers and users of box board because of the useful information it contains relative to the thickness, finish, weights, etc., of various kinds of board, including non-bending, solid news and solid wood pulp, pasted chip, pasted solid news, patent coated and solid manila, patent coated two sides, and double manila wood pulp filled board. Supplementary information includes definitions and method of determining weight of odd-sized sheets of box board.

Copies of R44-36 may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each; discount of 25 per cent on orders of 100 or more copies.

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 112 June 5, 1941 No. 23

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Ann Arbor, Mich., September 16-19.

ECONOMIC CONTROL

With the issuance of a proclamation declaring that a state of unlimited emergency exists, President Roosevelt may at any time take full or such partial control of industry as he may consider necessary for the best interests of the country. The powers conferred upon the President by Congress are so broad that the fullest use of them would constitute a dictatorship in fact if not in theory. This comprehensive authority was delegated to the President to expedite the handling of military and economic matters without the inevitable delays which legislative debate would entail.

The majority opinion supports this great power conferred upon the President and does in fact recognize that, in the declaration of a national emergency, the welfare of the country is of supreme importance and individual rights must necessarily be curtailed to some extent, the degree of regulation by government depending upon the urgency of shifting circumstances. The foundation for a regimented national economy has thus been laid, the effect of which cannot be foretold, although it is certain to have a very profound effect upon the future policy and activities of the government and upon all its citizens.

The authority of the President over industry is so absolute that it is sufficiently comprehensive to establish a new form of government in the United States. This is not to say that a dictatorship or government by edict rather than through constitutional means is to follow. But that possibility appears to be greater today than in the last world conflict and control over industry may be correspondingly greater. The authority has been granted and the necessary organization is now being set-up to function for defense and it is the expectation of some of the more liberal advocates of the New Deal that it may be continued to operate after the proclaimed unlimited emergency is over. In planning and carrying out the huge national defense program of today, the experience gained in the last world conflict has been utilized. It is impracticable to achieve the desired results without completely coordinating all the resources of the country. Therefore, industrial production, the allocation of raw materials, supervision of investments, regulation of prices and the direction of foreign trade must follow.

The control of investments is a most important phase of Government planning. It functions through the Federal Loan Agency under the guidance of Jesse Jones. Through the Reconstruction Finance Corporation the FLA will receive from Congress authority to increase its borrowing power by $1½ billions and Secretary Jones will be granted power to invest Government funds in all kinds of industries considered necessary to defense. These plants would include Government-owned aluminum, magnesium and airplane factories. Public funds are already being used in financing the building of four synthetic rubber plants, in the erection of a tin smelter and in the purchase of large quantities of rubber, tin, copper, manganese and other important defense materials. The FLA is now ranked as the greatest investment agency in the world and it is expected to function in that capacity. With the introduction of the sale of defense securities, the Government has assumed the leading part in directing private savings into public enterprise. It has been said by officials that Government funds should prove as attractive to private borrowers as private funds and that Government funds can be as equally as advantageously invested as private funds in such projects as housing, power plants and defense factories.

It may be noted that the Government participates in the management of industrial plants through its loan of funds. When the RFC supplies funds for industrial production to private concerns. it may and usually does require representation in the management. In the loan of funds to one concern to erect eighteen aluminum plants, these plants were mortgaged to the RFC and the concern followed the agency's recommendation to install a vice-president representing the Government's interest. The Government thus becomes a participant in management and in finance. Following this investment control, is the regulation of money and credit. For the last eight years the borrowing policies of the Treasury have established interest rates, and at a low level. The power of the President to devalue the currency has been extended several times. It is quite generally believed in banking and financial quarters that this monetary control by Government will be indefinitely continued.

Control of Government investment funds naturally

leads to a second step in a controlled economy, which results in the regulation of prices. The Office of Price Administration and Civilian Supply, under the guidance of Leon Henderson, is well organized to function for this purpose. Continued control of agriculture and crop prices is expected to be continued. As wages are the largest item in production costs it may be assumed that some measures to control wages can be expected. Thus far, the Government has, presumably, viewed the widespread increase in wage rates as justified and that no attempt to control wages will be made until such time as the rise may appear "unwarranted."

The setting up of priorities is viewed by some authorities as the initial step leading to more complete Government regulation on the order of the cartel system introduced in Europe.

This Government regulation, it has been pointed out, is likely to result in permanent Government supervision, perhaps similar to the old NRA. As foreign trade is now supervised by the issuance of export license, and the Government has extended its regulation over foreign exchange, private industry and trade are now widely subject to Government regulation and control. From a state of emergency Government direction of production and distribution or the permanent establishment of a controlled national economy may emerge during the period of adjustment which must follow the termination of the European conflict.

Electrochemistry May Be Key

Electrochemistry, which at present plates metals, makes alkalis and liquid chlorine, and is responsible for many other commercial processes, may before long produce foods and textiles, according to reports quoted in "The Pioneer," monthly magazine of Niagara Alkali Company and Electro Bleaching Gas Company.

Of interest to the paper and pulp industry are articles on "Paper Surgical Masks," "New Method Controls Paper Porosity" and "New Type Paper Closure for Milk Bottles."

Copies of "The Pioneer" are available without charge to any user of caustics or liquid chlorine upon request of Niagara Alkali Company, 60 East 42nd street, New York.

Sell Machinery of Atlas Paper Mill

J. J. Ross Company, 250 Frelinghuysen avenue, Newark, N. J., dealers in paper and pulp machinery of every description, announce that they have sold the entire equipment of the plant owned by them and formerly known as Atlas Paper Manufacturing Company, York, Pa., to Bird & Son, Inc., Phillipsdale, R. I. division, for removal. The purchasers are presently dismantling the equipment and will set same up at their own plant.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
April 19	94.5	April 20	86.5
April 26	98.3	April 27	89.4
May 3	100.1	May 4	89.3
May 10	100.9	May 11	88.6
May 17	98.8	May 18	91.7
May 24 (Prelim.)	*100.8*	May 25	92.7
(7-day operations prevalent)			

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.1	89.4	92.3	*96.7*	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date..	68.4	78.0	89.6	67.8	80.1	86.3	*92.0*
Year Average..	69.9	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	*83*	..	..	..	..	..	..	..	..	..

Week ending Apr. 19, 1941—78
Week ending Apr. 26, 1941—84
Week ending May 3, 1941—83
Week ending May 10, 1941—84
Week ending May 17, 1941—84
Week ending May 24, 1941—*85*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Waterproofing With Pliolite

Waterproofing of common kraft paper, widely used for packaging of bulk commodities, is opening up wider markets for application of this inexpensive bagging and wrapping material. Waterproofing is being accomplished by use of Pliolite, a moisture-vapor-proofing rubber derivative, developed by the Goodyear Tire and Rubber Company, which has been used for several years on high grade papers.

Practicability of applying Pliolite to kraft paper for water-proofing has been demonstrated by extensive usage in test markets prior to formal announcement. Kraft paper protected with the moisture-vapor-proof properties of Pliolite will be used by many paper bag manufacturers.

Prior to this development packaging of a number of common bulk commodities has been a problem with the industry because many of these materials absorb moisture and become "caked" under high humidity conditions.

Purpose of the Pliolite-coated kraft is to prevent the moisture from entering the bag, thereby keeping the contents in a factory-fresh condition. Moisture-proof kraft paper can be used in the usual methods of bag manufacture, and if desired, the bag may be heat-sealed to give a hermetically-sealed package. The Pliolite coating reduces the moisture-vapor transfer rate of the paper over one thousand-fold and is the most efficient moisture-vapor-proof coating Goodyear's laboratories have yet developed.

The new product is available to bag manufacturers through their established paper sources, or complete technical information on the subject may be obtained from the Pliolite Sales Division, Goodyear, Akron, Ohio.

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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Determination of Relative Humidity in Conditioning Paper for Testing

Foreword

Relative to the revised TAPPI method for conditioning paper for testing, T 402 m, which will be printed by the association in the near future for distribution, it seemed desirable to include a psychrometric chart for use in converting the wet- and dry-bulb readings to relative humidity. It was felt that this would lead to better agreement among laboratories in the converted values than if various charts or tables were used. In order to obtain information in this respect, members of the TAPPI Paper Testing Committee were asked to convert the same given psychrometric data by their usual method. Following are the results together with comments on them by Mr. F. T. Carson, National Bureau of Standards, who also prepared the chart to be used with the method.

B. W. Scribner, Chairman,
TAPPI Paper Testing Committee

The values of relative humidity corresponding to given psychrometric observations, determined from various sources of conversion data by a number of experienced individuals, are tabulated in the accompanying table in groups according to the conversion data used. In each group the values are in the order of increasing altitude of the testing station.

Most of the values were determined for a barometric pressure of 30 inches of mercury (sea level), inasmuch as for the range of humidity values considered, corrections for pressure are scarcely significant at elevations below 4 or 5 hundred feet. A few of the stations are at a sufficient elevation above sea level to require consideration of the barometric pressure correction. These stations should report values slightly higher (0.5, more or less) than the remainder.

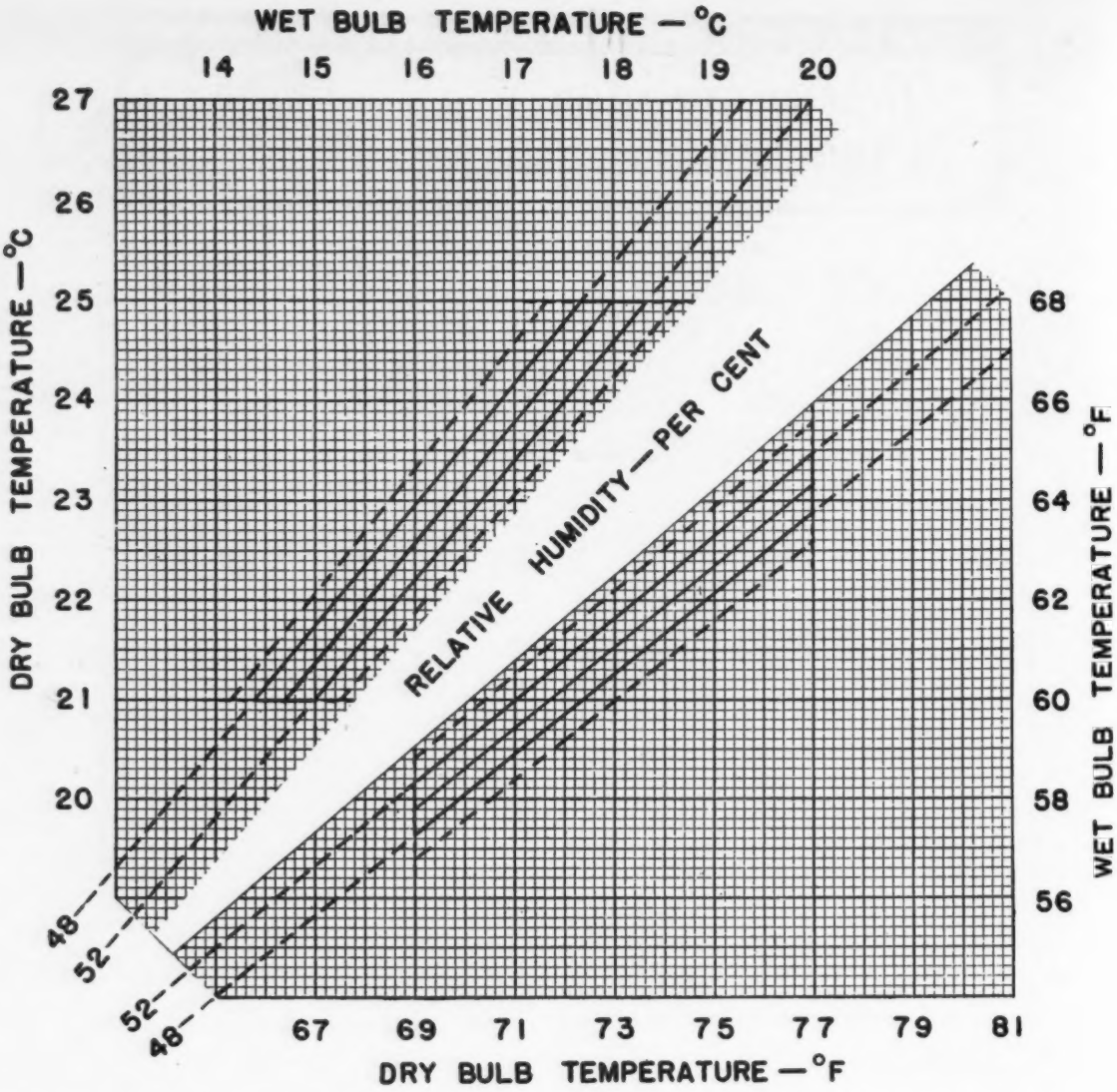
Slight differences (0.2 or 0.3) may possibly be accounted for in some instances by the fact that the temperature equivalents, expressed in tenths of a degree on the Centigrade and Fahrenheit scales, are not exact, although it appears that the Fahrenheit values were used in nearly all cases. Except for the small differences chargeable to these two circumstances, the values in each column should be the same.

It is interesting to observe that, after these allowances have been made, the agreement on the relative humidity corresponding to given psychrometric data is not very satisfying. In most of the columns the range of values reported is large, considering the allowable departure from the standard humidity (±2). The fact that the average of each column is close to the value determined from the Smithsonian Meteorological Tables seems to indicate a random difference. It is noteworthy also that the agreement among individuals using the same conversion data is not as good as might be expected. The tabulation seems to indicate that the conversion data customarily used are not sensitive enough to be consistent with the TAPPI requirements. Determinations made from the Weather Bureau Tables appear to show the best agreement, although the difference between corresponding values for the 780-foot station and for the other two should be uniform. That this is not the case probably means that even these tables are not sufficiently sensitive for the purpose.

In a conversion chart or table adapted to a wide range of psychrometric observations, sensitivity and simplicity are scarcely compatible. For a limited range of temperature and humidity values it is possible, however, to achieve both sensitivity and simplicity. An attempt has been made in this direction in a chart recently devised to encompass a small range of temperature and humidity values in the immediate neighborhood of the TAPPI standard. The chart is based on data in tables 75, 77, 82, and 84

RELATIVE HUMIDITY VALUES REPORTED BY A NUMBER OF LABORATORIES FOR GIVEN PSYCHROMETRIC DATA

Table or Chart	Elev. above sea level, feet	Dry-bulb and wet-bulb temperatures, °C.(°F.) 21.4(70.5) 14.7(58.5)	22.2(72.0) 15.8(60.4)	23.0(73.4) 16.6(61.9)	23.9(75.0) 17.4(63.3)	24.7(76.5) 17.4(63.3)
Carrier Chart	90	49.5	50.5	51.5	52.0	49.5
Carrier Chart	110	49	51	51	51.5	48.5
Carrier Chart	1200	49	51	52	53	48
Taylor Inst. Tables	28	48.0	50.6	51.5	51.9	47.4
Taylor Inst. Chart	50	49	51	52	51.5	48
Taylor Inst. Tables	450	48.5	51.0	52.0	52.0	49.0
Taylor Inst. Chart	581	49.5	51	51.5	52.5	45.5
Taylor Inst. Chart	835	48.0	50.2	51.5	51.9	47.4
Taylor Inst. Chart	948	48.0	50.6	51.5	51.9	47.3
Weather Bu. Tables (WB235)	100	48.0	50.6	51.4	52.2	47.4
Weather Bu. Tables (WB235)	100	48.0	50.6	51.4	52.2	47.7
Weather Bu. Tables (WB235)	780	48.5	50.6	52.4	52.2	47.9
Kent	20	48.5	51	52	51	48.5
Foxboro	50	48	50	52	52	47
Lange, Hndbk. Chem.	300	47.5	50.6	49.8	52.0	46.5


WET BULB TEMPERATURE — °C
14 15 16 17 18 19 20
27 26 25 24 23 22 21 20
DRY BULB TEMPERATURE — °C
RELATIVE HUMIDITY — PER CENT
48 52 52 48
67 69 71 73 75 77 79 81
DRY BULB TEMPERATURE — °F
68 66 64 62 60 58 56
WET BULB TEMPERATURE — °F

PSYCHROMETRIC CHART

Psychrometric chart for obtaining the relative humidity (in the neighborhood of the TAPPI standard, 50 per cent relative humidity and 23 deg. C.) from readings of a ventilated wet and dry bulb psychrometer. Permissible temperature and humidity conditions lie within the solid-line parallelogram. The chart is based on a barometric pressure of 760 mm. (30 inches) of mercury. For each 900 feet above sea level add 0.5. Example: Dry bulb temperature, 24.2 deg. C.; wet bulb temperature, 17.5 deg. C.; elevation, 1700 feet above sea level. The corresponding relative humidity is 51 (from chart) + (1700/900 × 0.5) = 52 per cent.

of the 1931 edition of the Smithsonian Meterological Tables. It is proposed to make this chart a part of the TAPPI specification, in the belief that it will aid in achieving greater uniformity in the conversion of psychrometric observations.

Inasmuch as the humidity tolerance allowed corresponds to an error of about ±0.5 deg. F. in the wet-bulb depression, it would be desirable to learn also how different individuals, using different psychrometers, would report the wet-bulb and dry-bulb readings in the same conditioned room. It would, of course, be much more difficult to obtain this information.

Under present conditions, considering both the uncertainty in making the psychrometric observations and the uncertainty in converting the readings to the corresponding relative-humidity values, it seems unlikely that identical values of relative humidity reported by different laboratories can be counted on to actually be the same within the tolerance specified by TAPPI.

Pennsylvania Salt to Expand

The Pennsylvania Salt Manufacturing Company, Philadelphia, Pa., manufacturer of chemicals for the paper and other industries, has begun erection of two new additions to branch mill at Wyandotte, Mich., consisting of a one-story unit, 122 x 126 feet, and one and two-story structure, 30 x 65 feet, to be used for increased capacity. Construction contract has been awarded to Barton-Malow Company, 1900 East Jefferson avenue, Detroit, Mich. W. D. LeBar is superintendent at the plant.

Patents and Preparedness*

By Charles W. Rivise[1]

Abstract

In these days of preparedness for national defense, we must not overlook the continued importance of research. National defense needs research almost as badly as it needs production. Research gives the quickest and most effective solution of immediate problems. It will enable our country to lead in the production of implements of defense as it has always led in the production of peacetime merchandise. If our industries are to survive the present emergency, research must not be neglected. For when the government stops ordring large quantities of armaments, research will fill the gap with new consumer goods, the true basis for a lasting prosperity.

Research and development work require large expenditures of time and money. Results would ordinarily not justify the expense, were it possible for competitors to avail themselves freely of the new developments. Formerly, the patent laws provided a very effective way to keep the field of an invention clear of competitors. Patent protection is not as effective a weapon as it once was, but unless an invention is of such a nature that it can safely be practiced in secrecy, it is still preferable to endeavor to protect it by means of a patent.

The creation of a favorable patent situation would be facilitated if the industrialist would adopt the golden rule as to his competitors' inventions; i.e., respect them as he would have his own inventions respected. The industrialist should adopt the policy of securing licenses, wherever possible, not only under his competitors' patents but also under the patents of independent inventors. Many of the really important advances in the arts have been made by free lance inventors, and the industrialist, who ignores this source of new products, is the loser in the long run.

The National Emergency

The war now raging in Europe has created problems, the like of which were never even dreamed of by the founders of this nation. We have undertaken the gigantic task of producing sufficient implements of war to render ourselves invulnerable to attack by any nation or group of nations. This task must be accomplished with as little interference as possible to normal business and industrial activities. In other words, we must continue to supply all our peace-time necessities, whether previously produced in this country or imported from abroad.

In this national emergency, there is a growing danger that research will be neglected. Research was never as important as it is today. Preparedness for national defense needs research almost as badly as it needs production. Research gives the quickest and most effective solution of immediate problems. If not neglected, research will undoubtedly enable our country to lead in the production of the implements of defense as it has always led in the production of peacetime merchandise.

Research during the present emergency should not and must not be limited to preparedness for national defense. We must be as prepared for peace as we hope to be for war. Peace after a long and exhausting war is as much an emergency as the conflict itself.

The last war brought in its wake a world-wide economic depression, the effects of which are still with us. If we are to prevent the recurrence of the last post-war depression, we must lay our plans now. We must direct a large portion of our research activities to the problems of changing over our industries from a war-time to a peace-time basis. When the government stops ordering large quantities of armaments, the gap must be filled with better and less expensive consumer goods. Otherwise, there is the danger that many of our industries will not survive the present conflict. Only research has it in its power to create new consumer goods, which after all constitute the true basis for a lasting prosperity.

Patents—A Product of Research

Patents may well be considered as one of the products of research. Research and development work invariably require large expenditures of time and money, and the results would not justify the expense, were it possible for those who did not share in the expense to avail themselves freely of the new development. The patent statutes provide one way of keeping the field of an invention free of competitors. Hence, many industrial establishments make it a policy to apply for patent protection on every invention that has commercial possibilities.

Advisability of Obtaining Patent Protection

Patents are becoming increasingly more difficult to obtain. The great increase in technical knowledge has greatly decreased the possible scope of patent protection, and the patent examiners are becoming more and more reluctant to allow claims on relatively small advances in the arts. Furthermore, the protection afforded by a patent is not quite as effective as it once was. The courts in a sincere effort to protect the public against what they erroneously deem to be burdensome monopolies, have invalidated a large proportion of the patents that have come before them in the last few years or have interpreted them so narrowly as to render them of doubtful value.

There is a growing tendency on the part of some industrial establishments to endeavor to protect their inventions as trade secrets rather than by means of a patent. This is a very short-sighted policy, for trade secrets are much more difficult to protect than are patented inventions, and most industrial concerns do not intentionally infringe their competitors' patents. Since patents do have a tendency to deter infringement, they should be obtained on every invention having commercial possibilities, for exactly the same reason that business men take out insurance policies against other industrial hazards.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y. February 17-20, 1941.

[1] Member, TAPPI, Patent Attorney, Caesar & Rivise, 1321 Arch St., Philadelphia, Pa., Chairman, TAPPI Patents Committee.

Before leaving this phase of the subject, the author expresses the hope that everyone having anything to do with inventions and patents will soon come to the realization that the almost wholesale manner in which patents have recently been invalidated can only result in defeating the very purposes of our patent laws; namely, the encouragement and stimulation of invention and ingenuity, and the inducement to inventors, to make their inventions public.

If democracy is to survive the present emergency, invention and ingenuity must be encouraged and stimulated as they were never before in the history of the world. This necessarily means that the contributions of the inventor, who, in the final analysis, is the benefactor of all humanity, must receive due recognition. It is not sufficient that celebrations be held every so often in honor of the inventor as a class, or that monuments be erected to individual inventors long after they are dead. Justice to the inventor requires that patent protection be made to mean exactly what the founders of our nation intended it to mean, namely, a means whereby the inventor may receive a reasonable compensation for the time, effort and money that he may have expended in making available his contribution to the arts and sciences.

Creation of Favorable Patent Situation

In a previous paper[2], the present author pointed out that the patent policy of an industrial organization should not only be continuous but it should also be coextensive with the scope of the establishment's industrial activities. A favorable patent situation cannot, generally speaking, be based upon sporadic efforts to protect individual developments. All patentable details, variations, alternatives and improvements should be protected.

It was also stated that patent protection should not be considered merely as a minor detail to the business and technical aspects of an individual development. It must be considered as an integral part of every research and development project from the very beginning.

It was also stated that the creation of a favorable patent situation can be very much facilitated by the adoption of a progressive and liberal attitude toward the employee-inventor. Employers should inspire their men with confidence that they will be adequately compensated for worthwhile inventions. The inevitable result will be a marked increase in the number of inventions developed within the organization.

The creation of a favorable patent situation would also be greatly facilitated if the industrialist would adopt the golden rule as to his competitors' patented inventions; i.e., respect them as he would have his own inventions respected.

The industrialist should also adopt the policy of securing licenses, wherever possible, under his competitors' patents. In exchange he can grant licenses under his own patents. By exchanging licenses under patents, two competitors can put their inventions to work over a larger field and strengthen their respective positions as against third parties. The interchange of patent licenses is entirely legal, provided that it is not used as a means to restrain trade in violation of the anti-trust laws.

[2] Creating a Favorable Patent Situation, Tech. Assoc. Papers 17:173-175 (1934).

The industrialist should also endeavor to secure licenses under the patents of individual inventors. Many of the really important advances in the arts have been and are still being made by free-lance inventors. The industrialist who ignores this source of new products and of better and cheaper ways of doing things is the loser in the long run.

Symposium on Steam Purity

At the forty-fourth annual meeting of the American Society for Testing Materials, June 23-27, Palmer House, Chicago, Committee D-19 on Water for Industrial Uses will hold a symposium on "Problems and Practice in Determining Steam Purity by Conductivity Methods."

Many problems have arisen in connection with the determination of steam purity by conductivity methods, but its possibilities of exactness and its adaptability for use with recording instruments have encouraged comprehensive research work to obviate them. This timely symposium will comprise the following technical papers:

"The Sampling of Steam and Boiler Water" by A. R. Belyea and A. H. Moody, Consolidated Edison Company of New York, Inc.

"Experimental Methods of Determining Conductivity Correction Factors for Dissolved Gases in Steam Condensate" by S. F. Whirl, Duquesne Light Company.

"Calculation of Corrections to Conductivity Measurements for Dissolved Gases" by D. S. McKinney, Carnegie Institute of Technology.

"The Degasification of Steam Samples for Conductivity Tests" by P. B. Place, Combustion Engineering Company.

"A New Type of Conductivity Apparatus for Use with Boiler Waters and Steam Samples" by A. R. Mumford, Consolidated Edison Company of New York, Inc.

"Conductivity Cells and Electrical Measuring Instruments." Author to be announced later.

This symposium, which is scheduled for the thirteenth session of the annual meeting on Thursday afternoon, June 26, at 2 P.M., should be most valuable to all interested in the determination of steam purity. A cordial invitation to attend is extended to all those concerned with this problem.

The A.S.T.M. meeting and the 6th Exhibit of Testing Apparatus and Related Equipment will be in progress throughout the week beginning Monday, June 23.

Graduate Biology-Forestry Students

First students to graduate in the new biology-forestry option course at the University of British Columbia, are Donald Buckland, Andrew Nash and Edward Marples. The three received honors in this course which was designed four years ago by Dr. Barr of the University of California, after a survey made at that time.

The course offers a new approach to forestry, apart from Engineering and Commerce. Dr. Hutchinson, head of the department of Biology and Botany expressed pleasure at the results of this course, which fills a real need in Silviculture.

Contributions to the Chemistry of the Plant Cell Wall

By W. M. Harlow[1]

PART I

Abstract

Thin sections of wood when completely delignified do not separate cell for cell but tend to break up into large or small cell aggregates.

Very slight mechanical agitation, or the effect of a swelling reagent results in almost cell for cell separation (maceration).

Pretreatment with hot dilute alkali (0.12 per cent NaOH) causes some visible swelling which apparently renders the cell wall more susceptible to the attack of delignifying reagents than it is normally.

Although there are several indications that such weak alkali treatment may alter the lignin itself, quantitative data are necessary to make any satisfactory statement in this regard.

Since alkali pretreated sections do not seem to disintegrate cell for cell upon delignification any more than untreated ones do, it does not seem necessary to assume a nonlignin binding material holding such cells together.

The fact that certain cells "stick" together may be accounted for on the not unreasonable assumption that during growth, the intercellular substance becomes so attenuated in places that the primary walls occasionally make contact with each other.

Why Do the Cells in Delignified Thin Sections of Wood Fail to Separate?

The answer to this question is not only of theoretical interest, but may also have practical significance since the separation of wood into its fibrous elements is the basis of the pulping operation.

A decade and a half ago, Ritter *(10)* found that thin sections of wood when delignified *tended* to fall apart into masses of dissociated cells, presumably because of the removal of the intercellular substance. Although Kerr and I. W. Bailey *(9)*, Dadswell *(3)*, Harlow *(7)*, and others have more recently shown that with careful handling it is possible to prepare completely delignified sections which do not macerate (here defined as *complete* separation of one cell from another), it is worthwhile to recall the earlier work to show how fragile such material is. Fig. 1 illustrates the condition of a thin (10 micron) section of spruce after complete delignification by means of alternate treatments with saturated chlorine water, and 10 per cent aqueous ammonia. The cells are completely soluble both in 72 per cent H_2SO_4 and Schweitzer's reagent, and may be considered comparable to Cross and Bevan cellulose. Such sections can be lifted cautiously with a wide mouthed pipette and deposited upon a microscope object slide without much breakage, even though many cells appear to be entirely separate from those surrounding them. In other cells the walls appear to touch at intervals, especially (in the conifers) on their tangential faces, and this apparently holds such sections together. Fig. 2 is from a photomicrograph of such material. By focusing up or down, the cells are seen to be completely separate from each other along their radial walls, while tangentially (arrow) the primary walls appear to be attached in some manner. Focusing sharpens this line and reveals no indication of intercellular substance. It is important to note that the slightest agitation, such as that caused by changing from water to low concentrations of alcohol, suffices to cause almost complete dispersal of these sections into small cell aggregations, and individual cells.

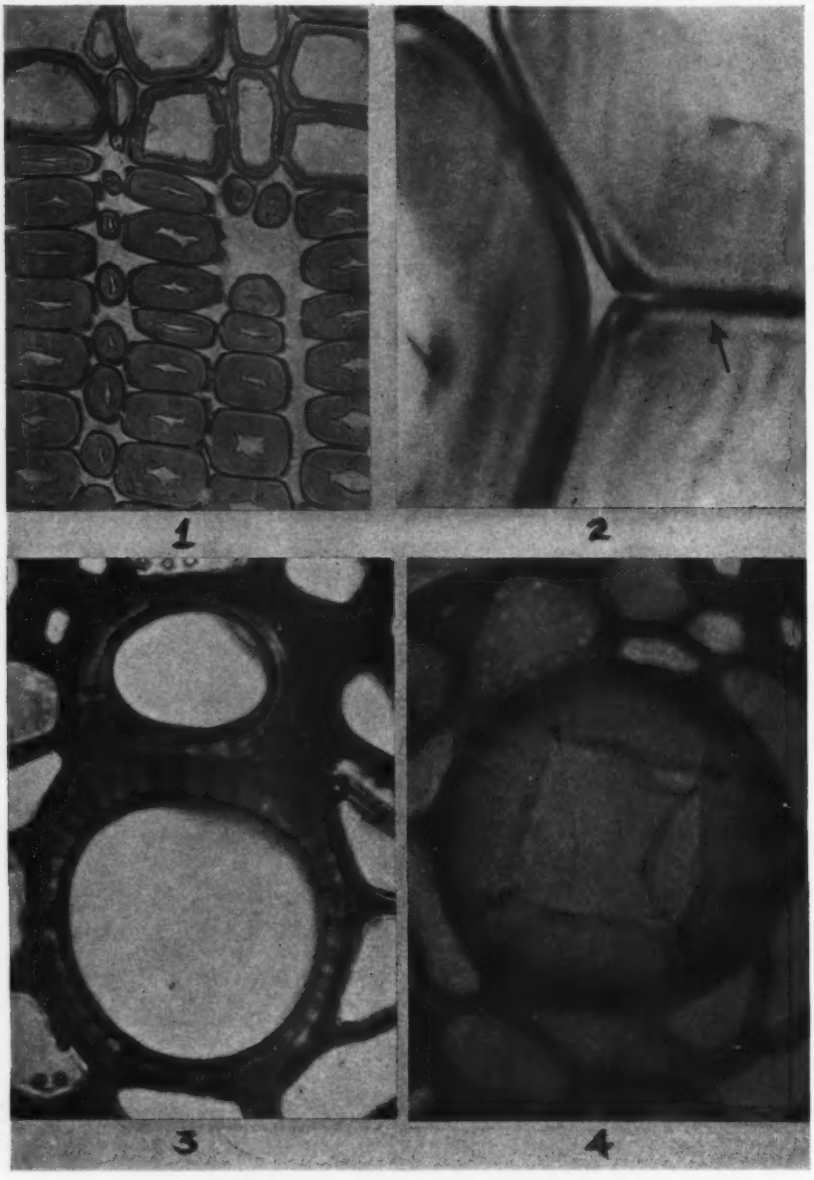
In an earlier paper *(7)* a suggestion was made to possibly explain why cells might stick together even though all the intercellular substance (true middle lamella) had been removed. To quote ". . . it is suggested that during cell growth, the intercellular substance is squeezed so thin especially on the tangential faces of the cells in the conifers, that the primary walls make contact occasionally with each other. Then, when the true intercellular substance is removed in delignification, portions of the section barely cohere, and the slightest agitation causes them to separate". This hypothesis received further support by Fowler and Harlow *(5)* who photographed untreated woody tissues with infrared radiations and were able to differentiate the true intercellular substance from the adjacent primary walls. Dadswell *(4)* in a recent study, principally of Australian woods, believes that there is some fiber bonding material holding such cells together, and that this material can be removed by alkali so weak (0.08 to 0.12 per cent) that lignin is unaffected thereby. Dadswell refers to the previous quotation and says that "he (the present writer) does concur in the assumption of a nonlignin binding material which holds the cells together in completely delignified sections". It should be pointed out that there are here two different ideas involved (1) that primary walls in *contact* may hold fibers together; (2) that between the primary walls is some substance not removed by delignifying reagents, but capable of removal by other reagents, in this case dilute alkali. The first was Harlow's suggestion, the second, Dadswell's conclusion from his experimental data; they are not one and the same. Furthermore it may be important to mention that Dadswell's material consisted of holocellulose while this writer's, as stated previously, was comparable to that prepared by the Cross and Bevan method.

The idea that some substance holds together delignified fibers has been advanced by Bixler *(1)* who was unable to demonstrate conclusively, however, that such was the case. Kerr and Bailey *(9)* thought this material, if such there be, was polyuronide in nature, but Dadswell *(3)* was unable to verify this, and Harlow's *(7)* results were inconclusive, partly due to the delicate nature of such delignified mate-

[1] Dept. of Wood Technology, New York State College of Forestry, Syracuse, N. Y.

rial, and the difficulty in properly interpreting results of treatment.

Returning to Dadswell's paper on fiber bonding material *(4)*, his contention that such a substance exists is based mainly on (1) that delignified sections suffer immediate maceration when treated with weak (0.08 per cent) aqueous NaOH, and (2) that sections pretreated with this strength alkali macerate upon delignification while untreated sections, as previously outlined, do not. Careful inspection of his illustrations shows that in 5 out of 6 cases, the degree of maceration *after* alkali treatment is little if any greater than that shown in Fig. 1 of the present paper representing a section of spruce completely delignified by chlorine water and aqueous ammonia. Especially is this true of Dadswell's two softwoods which after alkali treatment show the cells separated along their radial, but not tangential faces. It is also interesting to note that in 4 out of 6 cases, the alkali treated material shows cells apparently more swollen than they were prior to treatment; their outlines are less angular, and the lumena smaller.



FIGS. 1, 2, 3 AND 4 (Transverse Sections)

FIG. 1—Red Spruce Wood Completely Delignified, ×400. Maceration Is Not Complete. FIG. 2—A Portion of a Similar Section Showing Apparent Attachment of Primary Walls Tangentially (Total Enlargement 3000 Times) Photographed by Infrared Radiations. FIG. 3—Black Ash Showing Condition of Summer-Wood Vessel after 3 Treatments with Bromine Water and Weak Ammonia, Respectively, ×900. FIG. 4—Similar to FIG. 3, but Section Was Pretreated with Hot 12 Per Cent NaOH before Delignifying Reagents Were Applied. Note Swollen Wall.

Experimental Part

Transverse sections 15 microns thick were prepared from small blocks of the following woods, aspirated in cold distilled water, and stored in 20 per cent ethanol until used. The following list of woods

were tested: sugar pine *Pinus lambertiana,* sitka spruce *Picea sitchensis,* white fir *Abies concolor,* red alder *Alnus rubra,* black ash *Fraxinus nigra,* hackberry *Celtis occidentalis,* catalapa *Catalpa speciosa,* cottonwood *Populus sp.,* buckeye *Aesculus sp.,* and tupelo *Nyssa aquatica.*

Since Dadswell *(4)* used varying concentrations of alkali from 0.08 to 0.5 per cent, it seemed likely that 0.12 per cent should give comparable results, and was arbitrarily chosen for these experiments. Several sections were placed in approximately 10 cc. of aqueous 0.12 per cent NaOH in a shell vial set in a beaker of hot water (kept just below boiling) for 1 hour. The sections were removed, washed, and one of them immersed together with an untreated section in phloroglucin-HCl reagent. With the exception of white fir which later proved to be the most strongly lignified of the species tested, all alkali treated sections showed a fainter pink than control sections.

Furthermore, when stained with safranin and light green (see details Part II of this paper), the alkali sections all stained *green* while the controls showed various combinations of red and green.[1]

Careful inspection of alkali treated sections showed evidences of cell wall swelling, particularly in the summerwood vessels of black ash. This became more evident upon delignification (Figs. 3 and 4). Sections from the alkali were treated side by side with controls in 72 per cent H_2SO_4 and observed with a microscope. In the conifers, little if any difference was seen, but in the hardwoods, the cell walls of sections pretreated with NaOH disintegrated faster, there was less distortion, and a more unbroken middle lamella (compound) network remained.

When alkali treated and untreated sections, respectively, were delignified together, several differences in behavior were noted (Table I.). The most important fact is that alkali pretreatment resulted in a faster removal of the lignin than in untreated material. It could not be said that actual maceration took place in either case, however, but the sections became increasing difficult to handle and tended to separate into cell aggregates. The alkali treated sections reached this point about one stage ahead of the control sections.

[1] These results were confirmed by treating sections of the species listed, with .05% NaOH (hot) for 1 hour followed by safranin and *fast* green. At the end of the alkali treatment the sections were each split in half, and one set was washed in slightly acidified water, while the other was thoroughly washed in distilled water. In both cases, the results were the same as already noted.

Discussion

Because, as Dadswell states *(4),* delignified sections macerated upon treatment with dilute alkali, does not seem sufficient proof that some fiber bonding material had been removed unless the possibility of swelling can be precluded.

When the extreme fragility of delignified sections is considered, it is clear that the slightest prying action of any sort could account for the separation of the cells. Since swelling is indicated in most of Dadswell's illustrations of alkali treated material, and has been observed also in the present study (Fig. 4), it seems probable that this may cause separation of cells as reported.

The fact that pretreatment with weak alkali produced sections which "macerated" upon delignification (Dadswell) seemed more important in proving the assumption of a nonlignin fiber bonding material. However, the effect of this treatment upon the apparent speed of lignin removal in comparison with untreated material makes it unnecessary to assume the presence of some substance other than lignin holding the cells together. In the present experiments alkali pretreatment did not result in cell for cell separation upon delignification but rather in sections so fragile that they could be handled only with the greatest care. Such material, however, is normally produced in any event upon complete delignification. The loss in weight reported by Dadswell may be due to the fact that his sections approximated holocellulose rather than that of the Cross and Bevan procedure.

PART II

Abstract

In some species of woody plants, lignified walls appear to have an affinity for safranin, while cellulose walls adsorb light (or fast) green more readily.

Other species cannot be placed in this category, since the cell walls may stain entirely red, or entirely green, and some may show both colors in the same wall.

TABLE I.
RESULTS OF DELIGNIFYING SECTIONS OF HACKBERRY WOOD

	Check Section					Section treated with hot .12 per cent NaOH				
	Maüle Reaction	72 per cent H_2SO_4	Phloroglucin HCl	Condition in Handling[1]	Behavior to Safranin & green	Maüle Reaction	72 per cent H_2SO_4	Phloroglucin HCl	Conditioning in Handling	Behavior to Safranin & green
Untreated	Normal Pink	Vessel walls persist; and "middle lamella" network. Fibrous secondary walls disintegrate	Vessel walls, and middle lamella red-dest	Normal	Entire section retains the *red* stain	Strong but not normal	Like control but walls in fibrous tissue disintegrate faster	Color fainter than in control	Normal	Entire section stains *green*
After 1st Bromination and ammonia treatment	"	"	No color	Normal	Fibrous elements mostly green; vessel walls reddish	"	Vessel walls also disintegrate; "middle lamella" network persists	No color	More tender than control	"
After 2nd Bromination and Ammonia Treatment	Fainter than above	Vessel walls disintegrate; network is fainter	"	"	Entire section shows green	Fainter than control	Fainter network than control	"	Very tender and difficult to handle	"
After 3rd Bormination and Ammonia Treatment	Very faint but still positive color	Faint but still connected network	"	Slightly tender	"	Entirely white	Almost complete disintegration Fragments only remain	"	Falls to pieces readily but does not "macerate"	"

[1] Condition in handling was judged by weather or not a section could be removed from the reagents with forceps. As delignification progressed, this became increasingly difficult and it was necessary to use a wide mouthed pipette.

This behavior (No. 2) apparently has no chemical significance discernible at present.

Treatment with hot weak alkali completely alters the affinity of certain walls for safranin, and the cells of all woods tested stained green.

Stains cannot be used as trustworthy indicators of chemical composition unless their apparently specific affinities are first checked by other microchemical means. Color tests thus developed cannot be used on other tissues of different species without again resorting to microchemical analysis.

SAFRANIN AND GREEN FOR DIFFERENTIATING LIGNIN FROM CELLULOSE IN THE CELL WALLS OF WOOD

Safranin for staining "lignified walls, and light (or fast) green for cellulose has long been a recommended combination, and is featured in the latest texts on botanical microtechnique *(8) (11)*. Clarke *(2)* used this combination in studying the comparative strength and amount of "lignification" in a number of tropical, and temperate climate woods, respectively; while Dadswell *(3)* found that there appeared to be a high correlation between the amount of lignin in the secondary wall, and its affinity for safranin.

Experimental Part

It is usually recommended that sections be stained for about 1 hour in 1 per cent aqueous safranin, washed in 50 per cent alcohol, and then stained for 30 seconds to 2 minutes in 1 per cent light (or fast) green in 90 or 95 per cent alcohol.

This procedure was followed with transverse sections of sugar pine, sitka spruce, white fir, red alder, tupelo, and black ash. Similar sections were stained with phloroglucin-HCl, and others subjected to 72 per cent H_2SO_4. From these studies, it could be concluded that with few exceptions, walls which stain deepest with phloroglucin, and are most resistant to 72 per cent H_2SO_4 have a greater affinity for the red stain, while those which stain lightly or not at all with phloroglucin, and disintegrate in the acid, have an affinity for the green. It seemed important to find out whether the dye adsorptions could be reversed by applying the green in aqueous solution first, followed by the red in alcoholic solution. This was done, and in the species tested safranin proved to be a much "stronger" stain than the green. Sections stained 3 hours in the green became *entirely* red after as little as 5 minutes in safranin. No selective action at all was attained by this procedure. If when applied in the usual manner, these stains are really selective, it should be possible to leave sections in the green for a considerable time without changing the results. Therefore, sections stained previously for 3 hours in safranin were left in the green for 1 hour, and the only difference noted was that the contrast between red and green was better than in the recommended procedure. Cell walls of the softwoods tended to retain the red better than did the fibrous elements in the hardwoods, but it should be noted that this staining combination differentiates more poorly in the conifers than in the hardwoods. Coniferous tracheid walls sometimes stain red; but they may appear green, or a combination of both in the same wall. In the hardwoods, the parenchymatous tissues, and vessel walls seem to have an affinity for the safranin, while the middle lamellae in both groups stain predominantly red.

Since greater variation in selectivity was observed in the hardwoods, sections of hackberry, catalpa, cottonwood, and buckeye were also tested and stained together in the same watch glass. Table II indicates the variation to be expected when a sufficiently large number of species is sampled. Furthermore, since the safranin is supposed to indicate "lignified" walls, it is of interest that a one hour treatment in hot dilute aqueous NaOH suffices to completely alter the "affinity" of the entire tissue for safranin. After this treatment, the presence of lignin can still be demonstrated by chemical methods. Similar treatment with hot water only; and also a hot 1 per cent solution of ammonium oxalate, failed to alter the behavior of the sections toward safranin and green; such material stained normally.

TABLE II.
SECTIONS OF WOOD STAINED WITH SAFRANIN AND LIGHT GREEN

Species	Sections of Untreated Wood	Sections treated 1 hour in 0.12% NaOH
Black ash	Vessels and wood rays bright red; middle lamellae (compound) red throughout; very thin walled tracheids around vessels red; thick walled fiber tracheids (mostly summer wood) bright green	Entire section green; red is not retained by any part of the cell wall
Hackberry	Entire section stains red	" " "
Catalpa	Vessels red; middle lamellae especially at corners red; few rays pinkish, but most of them green; fibrous tissues all green	" " "
Cottonwood	Entire section green except middle lamella corners which are red	" " "
Buckeye	Same as cottonwood	" " "

Discussion

Some time ago, it was found *(6)* that stains used individually tended to stain the middle lamella region (including primary walls) the strongest, the secondary walls the least. There appeared to be no reason, sound chemically, for using stains as indicators of cellulose or lignin unless adequate microchemical tests were used to first characterize these materials in the cell wall. The combination used in this study evidently comes nearer to satisfying the requirements of true microchemical staining than others thus far investigated, but one would indeed be rash to draw any sweeping conclusions as to the value of even this combination after noting the variation shown in Table II. Certainly, the cell walls of hackberry are not predominantly lignin while those of cottonwood and buckeye contain no lignin at all except at the corners of the middle lamellae; and yet hackberry stains practically 100 per cent red, while the other two species are mostly green.

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Some Factors Affecting the Compressive Strength of Fiber Boxes*

By T. A. Carlson[1]

Abstract

The influence of three depths of horizontal scoring on the top-to-bottom and end-to-end compressive strength of corrugated fiberboard boxes is discussed with the aid of autographic load-compression curves. Other manufacturing variables are mentioned, and the significance of the compression test in relation to protection needed by different classes of commodities is shown by means of tests of filled and empty boxes and of box parts.

The compression test is perhaps the one most commonly used today for evaluating the relative efficiency of corrugated fiberboard containers. It is used for comparing the ability of different boxes to resist stacking loads or the thrust of other boxes such as may be encountered in transit. In addition, it often discloses from the nature of the failures, deficiencies in design, construction, or fabrication that point the way to improvements.

It is well known that two lots of boxes of the same design and made from the same paperboard may show widely different results in the compression test because they have been treated differently in the manufacturing processes. Many of the variables involved in these processes are recognized by box manufacturers and testing agencies, and attention is constantly being directed toward reducing or eliminating their influence as far as the strength of the box is concerned. These variables must of necessity be considered in any study of corrugated fiber boxes. The Forest Products Laboratory has encountered some of them in its study of corrugated board as an engineering material, and it is realized that they will enter into its present study of correlating the strength of the board with that of the box. For instance, in converting corrugated board into boxes, one of the operations that has a large influence on the resistance of the box to compression loads is the scoring or creasing to form the edges of the box.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Senior Engineer, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, maintained at Madison, Wis., in cooperation with the University of Wisconsin.

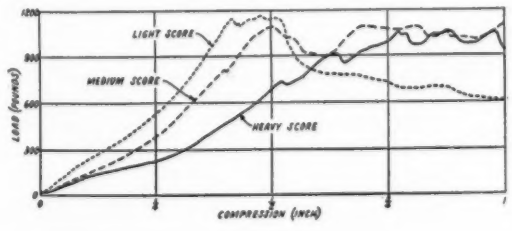


FIG. 1

Influence of Depth of Horizontal Scores Shown by Autographic Record of Top-to-Bottom Compression Tests of Boxes Made from B-Flute Board with 0.030-Inch Fourdrinier Kraft Liners and 0.009-Inch Kraft Corrugations.

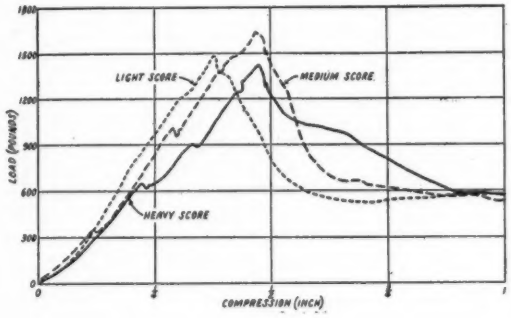


FIG. 2

Influence of Depth of Horizontal Scores Shown by Autographic Record of End-to-End Compression Tests of Boxes Made from B-Flute Board with 0.030-Inch Fourdrinier Kraft Liners and 0.009-Inch Kraft Corrugations.

Scoring related to Compression Resistance

The subject of scoring has been given some consideration in exploratory work to establish a procedure for making boxes for tests, and some examples of autographic load-compression curves showing the effect of different depths of scores are included in this discussion. In these tests an attempt was made to hold all factors constant except the depth of scoring. Results of top-to-bottom compression tests of one group of boxes using three depths of scoring are shown by the autographic load-compression curves of Fig. 1. The "light" score was the lightest that could be made on a rotary creaser with the paperboard at a given moisture content without resulting in visible cracks when the flaps were bent into place for sealing. The "heavy" score was the deepest that would not show cracks immediately after scoring or when the flaps were bent into place for sealing. The "medium" score was made with the scoring wheels midway between the two extreme positions.

It is apparent that under the circumstances involved in this experiment the boxes made with the light score had the highest compressive load and that they also showed the smallest amount of compression (less than ½ inch) before reaching their maximum load. However, the boxes having the light score showed a more rapid falling off in resistance to crushing loads once the maximum was reached. As the curves show, the boxes with the medium depth score maintained the maximum crushing load fairly well until a compression of 1 inch was reached, whereas the boxes with the heavy horizontal score did not attain their maximum value until they had been crushed down about ¾ inch.

The effect of these three depths of horizontal scores on the end-to-end compression tests of the boxes is shown in Fig. 2. Here the relative stiffness of the three lots of boxes during the first part of the test, as shown by the positions of the curves, is about the same as in the top-to-bottom tests—i.e., the curve for the boxes with medium scores lies between the

other two. Although the medium score showed the highest maximum load, there was little difference in the amount of compression at which the maximum load occurred, and the falling off of the load from this point was very rapid in all three lots of boxes.

Significance of Curves

The results shown by these curves are not necessarily typical of all combinations of materials used in making corrugated paperboard. However, if the boxes made from this paperboard were intended for packing a material that could not, of itself, resist crushing loads and therefore needed the protection of the box, then the first part of the curves would have a definite significance. For instance, if in top-to-bottom compression the contents would not be damaged by a compression of ½ inch or less, the boxes with the light score would offer the greatest security against such crushing forces. By the same token, the boxes made with the light horizontal score also appear to offer a slight advantage over the other two lots of boxes under end-to-end crushing forces, providing the amount of compression does not exceed 0.4 inch. These figures are not intended to establish any standards as to the limits of allowable compression, but are merely used to show the application of compression test data to a specific problem. The actual allowable compression that should be allowed for any specific commodity will have to be determined separately for that commodity and for the conditions that it is expected to encounter.

Scoring Influences Tearing Resistance

At this point a question might naturally arise as to whether the conditions of creasing that result in the best rigidity would also produce a creased edge that would have the greatest resistance to tearing. No general answer can be given to this question. However, tests were made on the horizontal scores taken from boxes like those used in the above-mentioned compression tests to obtain information relative to this material. The tests were made on the Forest Products Laboratory score tester which has been found to follow quite closely the relative resistance to handling as shown by drum test of boxes carrying such materials as canned goods. The score test results are given below:

SCORE TESTS OF BOARD RR
(INITIAL TENSION 2 POUNDS)

Depth of score	Number of bends	Tension at failure
Heavy	47	15
Medium	68	22
Light	77	25

Thus, it is seen that the light score in this material showed the greatest resistance to tearing as well as having the greatest rigidity in the compression test.

Optimum Compressive Strength Indicated by Tube Tests

This light score, however, may not necessarily be the best that can be attained with this material. From the standpoint of getting the greatest rigidity from a given combination of materials, compression tests of boxes having horizontal scores that involved no crushing of the corrugations would perhaps result in the optimum theoretical rigidity. Such a score, if attainable, would avoid the crushing or rolling at the top and bottom edges of the box so that the force would be absorbed directly by the side and end faces. An idea of what would result from such a condition is shown in Fig. 3 on which autographic load-compression curves are given for (1) top compression tests of the box having a light score from Fig. 1, and (2) a top compression test of a tube of the same size made from the same B-flute board. By tube is meant the sides and ends of a rectangular box (without top or bottom) in which the top and bottom edges were cut as squarely across as possible with a sharp power saw. It is apparent that the tubes withstood a much greater load at a considerably smaller compression than the boxes of the same size. The results of the tube tests indicate the inherent strength and stiffness existing in the material, and may be set up as the goal toward which scoring or creasing operations should be pointed.

Other Variables Affect Strength of Box

There are, of course, many other factors besides the horizontal creases that affect the ability of the box to resist crushing forces. Much is known, for instance, about the influence of printing on the rigidity of the box. Also a great deal of study has been done by the industry and by testing laboratories to determine the influence on box strength of the numerous variables involved in combining the sheet materials to make corrugated board. The vertical scores, the efficiency of the body joint, and many other factors are recognized. However, they cannot be considered in detail in this short article. There are also other conditions of use and loading in addition to the ones mentioned in the foregoing discussion, that are related to the crushing resistance of the box. One of these is the condition in which the contents of the box are of such a nature that they are better able than the box itself to resist external crushing loads. This may be considered the other extreme of the condition in which the contents need the protection of the box against such forces.

Compression Tests of Box Parts

It is interesting to observe what takes place in compression tests of boxes filled with materials able to resist some crushing as, for example, in tests of boxes and parts of boxes of a size for 24 no. 2 cans.

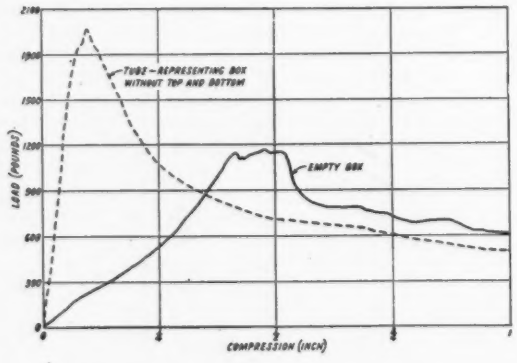


FIG. 3

Comparison by Means of Autographic Record of Top-to-Bottom Compression Tests of Tube and Empty Box of Same Size Made from B-Flute Board with 0.030-Inch Fourdrinier Kraft Liners and 0.009-Inch Kraft Corrugations.

Results of tests to study the flatwise compressive resistance of the top and bottom flaps in relation to the compression test of the box and tube are shown in Fig. 4. The first curve at the left shows the test of a single flat piece of corrugated board having a surface area about equal to one pair of end flaps. The curve having two nodes represents the load-compression results obtained from crushing flatwise two sets of flaps consisting of the complete top and bottom cut from a sealed box. The top of the first node of this curve is the point at which the corrugations in the end flaps failed in the test. The load sustained at this point is about the same as was obtained with the single piece of corrugated board of the same total area as the end flaps but it occurred at a greater amount of compression. After the corrugations in the end flaps of the 4-layer unit were crushed together, the compressive load was apparently taken by the side flaps which represent a greater surface area. The top of the second node in the curve shows the point where the corrugations in the side flaps failed. Incidentally, the intensity of the compression loads calculated on the basis of respective areas of end and side flaps is about the same at both of the nodes. The load at the first node, on the basis of end-flap area was 17.1 lb. per sq. in., and at the second node, on the basis of side-flap area was 17.3 lb. per sq. in. The curve with the two nodes is perhaps the type that might be expected from a top-to-bottom compression test of a regular slotted carton in which the contents fill the box completely and also offer a continuous flat surface of contact against the end flaps. Compression tests of boxes under such conditions should be of value in studying the relative stacking qualities of boxes made of different materials or with different constructions.

It may be of interest to note that the stiffness of the end flaps in the 4-layer unit as shown by the slope of the first part of the curve in Fig. 4 is about the same as the stiffness of the tube made of the same material. Although the direction of the curves for these two tests is pretty much the same up to the point of failure of the tube, the flaps withstood a higher maximum load. Hence it would appear that under the conditions assumed here the sides of the box would not offer much assistance in resisting stacking loads. This relationship will no doubt vary

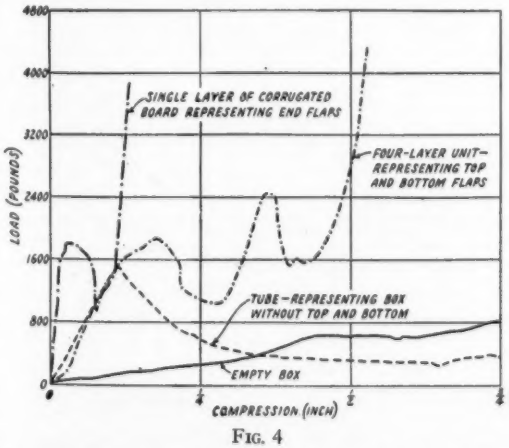


FIG. 4

Autographic Record of Top-to-Bottom Compression Tests of Empty Box and Tube, and of Flatwise Compression Tests of Component Parts of Box Made from A-Flute Board Having 0.016-Inch Cylinder-Made Liners and 0.009-Inch Straw Corrugations.

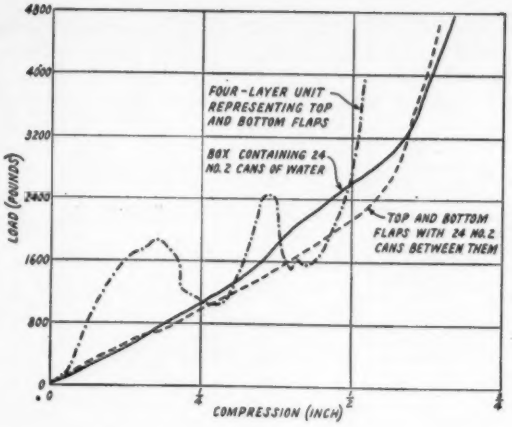


FIG. 5

Autographic Record of Top-to-Bottom Compression Tests of Filled Box and Tests of Component Parts of Box Made from A-Flute Board Having 0.016-Inch Cylinder-Made Liners and 0.009-Inch Straw Corrugations.

with the material and with different sizes and shapes of boxes. However, there are two significant things about these sets of curves that may be worth mentioning. First, the stiffness of the assembled flaps as shown by the slope of the curve is less than that of the single sheet of corrugated board, and second, as has already been pointed out, the stiffness and strength of the empty box are below those of the tube of the same size. Apparently, the stiffness of the corrugations in the flaps has been reduced by the operations of sealing, and the characteristics of the box have been affected by the operations of scoring and other factors. Hence it would seem desirable that every operation in the manufacture, handling, and closing of a corrugated box should be carefully done in order to retain in the box as much as possible of the inherent strength and stiffness of the board.

Tests of Boxes Filled with Cans

The conditions assumed in the discussion of results shown in Fig. 4 may be considered somewhat hypothetical or special, because all commodities packed in corrugated boxes do not expose a flat and even surface to the flaps. For that matter it is believed that any compression test of a corrugated box filled with its contents can be considered a special test, the results of which are as a rule applicable primarily to the conditions being studied.

Included in this exploratory study was one other series of such special tests which involved corrugated boxes containing cans filled with water. A commodity of this kind does not offer a flat, even surface to the flaps under a stacking load. Moreover, it is apparent that if the cans are of the roll-top variety, such as they were in these tests, that a compressive load on the top of the box would be concentrated at the edges of the cans with the result that the corrugations would first be crushed at these edges. A test of this condition, which was made by cutting away the sides and ends of the box and applying a compressive load to the top and bottom flaps with 24 no. 2 cans between them, resulted in the curve shown in Fig. 5. Shown with this curve is the curve for the flatwise compression test of the two sets of flaps taken from Fig. 4. It may be noted that the nodes which appear in the curve for the test of

the 4-layer unit are not found in the curve involving the cans. Also shown in Fig. 5 is a curve obtained from a compression test of a sealed box containing 24 cans filled with water. It appears from the close proximity of the curve for the loaded box and the curve for the top and bottom flaps with cans between them, that such a test of a loaded box is largely a test of the crushing resistance of the top and bottom under special conditions. Although the sides and ends of the box buckled before any apparent damage was done to the cans, the resistance to compression afforded by the walls of the box, as judged by the tube test, was only a small part of the total load. This buckling of the walls of the box occurred at a load of about 10,000 pounds, whereas the tube of this size withstood only about 1500 pounds. If the compressive load were evenly distributed over each layer of 12 cans in the box a total load of some 30,000 pounds might be expected, as separate tests indicated that one of the no. 2 cans would support a load of 2760 pounds. It is apparent that as soon as the corrugations in the top and bottom flaps had been crushed at the edges of the cans, most of the compressive load was taken by the cans.

An idea of the extent to which the load was supported by the contents of the box is given by the curves in Fig. 6 in which the curve for the filled-box test has been converted to the same scale that was used on the testing machine for empty boxes and tubes. Although only a portion of the curve from the filled-box test is shown, its position and slope indicate much greater load-carrying capacity and rigidity than does the curve for the empty box. Moreover, by the same criterion, it can be said that the filled box lacks the rigidity shown by the tube of the same size. This set of three curves seems to substantiate the conclusion that in such a box, filled with cans, little of the top-to-bottom compressive load is taken by the walls of the box and that the value of such a test lies principally in indicating relative stacking properties of different boxes or materials for the particular commodity being packed.

A series of tests somewhat similar to those described was made to study the end-to-end compression characteristics of corrugated boxes. While the results do not exactly parallel those of top-to-bottom compression tests, the conclusions gained from them are no different. Hence they are not shown here.

Significance of Compression Tests

It appears from the foregoing that the compression test of filled corrugated boxes can conveniently be considered under two separate categories, depending on the nature of the commodities packed in the boxes.

If the commodity cannot of itself resist crushing loads, the compression test should prove of value in indicating the protection afforded to the contents as well as the stacking characteristics. With such a commodity the resistance to compression seems to devolve largely to the walls of the box. The scores, of course, have an important influence in the over-all rigidity (or lack of it) in such a box, and the optimum theoretically attainable strength and stiffness would be indicated by the tube test.

If the contents are better able than the box to withstand crushing forces, the value of the compression test lies largely in the indication of stacking qualities. With such a commodity it appears that the stacking resistance, or the top-to-bottom compression resistance, depends to a large extent on the ability of the corrugations in the top and bottom flaps to resist crushing. While the flatwise compression test of a single sheet of corrugated board may indicate the loads that can be carried flatwise by the flaps, it is also important to consider the amount of compression in the flaps and whether or not the load is evenly distributed over the surface. Both of these conditions may be affected by the handling that the flaps receive in the sealing operation, and it is apparent that any unevenness in the crushing of the corrugations in the flaps would contribute to the toppling of a stack of boxes.

It thus appears that for each of the two kinds of contents considered, different portions of the box are brought into play. Hence, such compression tests of filled boxes may be considered as special tests. Moreover, since it is not always convenient to test boxes filled with their contents a more general test is desirable. The compression test of the empty box has been used for this purpose, but in the light of the tests described here there may be one question regarding its application to stacking requirements. That question is whether or not the compression test of an empty box shows the resistance of the corrugations to flatwise compression. Perhaps it does not do this directly, but it is conceivable that the characteristics of a given type of board which provide flatwise crushing resistance would also be important in providing resistance to endwise crushing. Hence, even though a test of the empty box may seem to be largely a test of the walls of the box and the efficiency of scoring, the results would also have some bearing on the ability of the board to resist flatwise compression. In addition, the test of the empty box permits better observation of the nature of the failures which are of utmost value in disclosing conditions in manufacture that need correction. It is believed that the compression test of the empty corrugated box is one of the most convenient and efficient means of appraising the quality of materials, the fabricating influences, and general efficiency that is built into such a box.

The use of this test in arriving at details of design and construction of corrugated boxes must take into consideration such factors as variability of component materials, effect of manufacturing variables of board and of boxes, the moisture conditions of use, and the duration of the loads to which the boxes are subjected. These factors, together with a factor of safety to provide for accidental overloads, are quite similar to those considered in any other engineering structure.

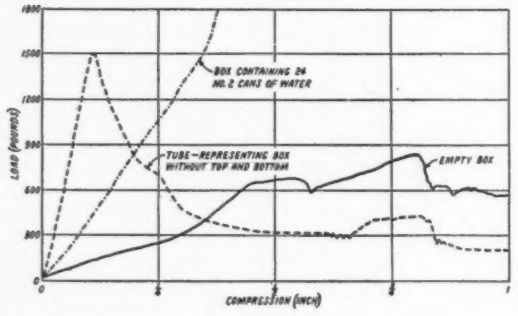
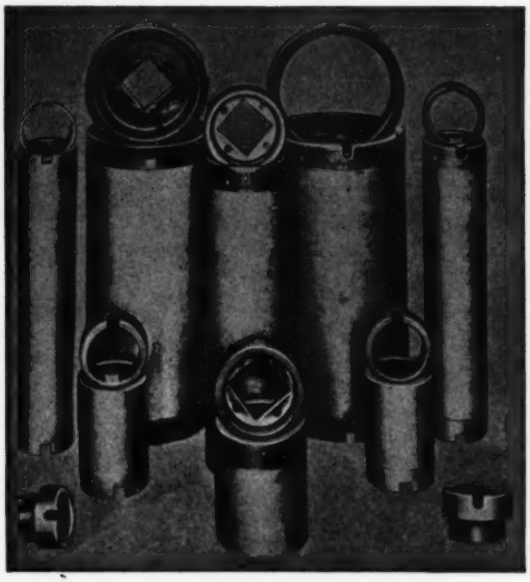

BOX CONTAINING 24 NO. 2 CANS OF WATER
TUBE—REPRESENTING BOX WITHOUT TOP AND BOTTOM
EMPTY BOX
LOAD (POUNDS)
COMPRESSION (INCH)

FIG. 6

Comparison of Tube, Filled Box, and Empty Box in Top-to-Bottom Compression Test. All Made from A-Flute Board Having 0.016-Inch Cylinder-Made Liners and 0.009-Inch Straw Corrugations.



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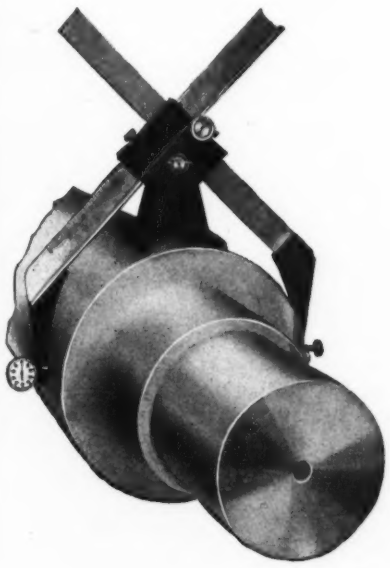

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Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING MAY 31, 1941

SUMMARY

Cigarette paper .....372 cs.
Newsprint .....6,585 rolls

CIGARETTE PAPER

———, ———, Barcelona, 110 cs.
Kuenzle & Streiff, ———, Alicante, 49 cs.
E. F. Pipe & Co., ———, Alicante, 80 cs.
E. F. Pipe & Co., ———, Barcelona, 60 cs.
American Tobacco Co., ———, Lisbon, 73 cs.

NEWSPRINT

———, ———, Corner Brook, 4,916 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 389 rolls.
International Paper Co., ———, Gatineau, 288 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 371 rolls.
International Paper Co., ———, Gatineau, 286 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 335 rolls.

RAGS, BAGGINGS, ETC.

Irving Trust Co., ———, Rio de Janiero, 68 bls. cotton linters.
W. Steck & Co., ———, Bombay, 424 bls. old pickers.
American Cotton Products Co., ———, Bombay, 300 bls. cotton waste.
New England Waste Co., ———, Bombay, 180 bls. cotton waste.
W. Intner Co., ———, Bombay, 228 bls. cotton waste.
Camden Fibre Mills, Inc., ———, Bombay, 622 bls. cotton waste.
Green Textile Associates, ———, Bombay, 143 bls. cotton waste.
———, ———, Bombay, 600 bls. cotton waste.
C. Comiter, Co., ———, Bombay, 300 bls. cotton waste.
Cohn, Hall, Marx Co., ———, Bombay, 200 bls. cotton waste.
Castle & Overton, Inc., ———, Buenos Aires, 14 bls. meat cloth, 14 bls. threads, 21 bls. hoseries.
Hercules Powder Co., ———, Buenos Aires, 266 bls. cotton linters.
Hercules Powder Co., ———, Santos, 1412 bls. cotton linters.
Williamson Products Co., ———, Santos, 113 bls. cotton waste, 69 bls. cotton picker-waste, 930 bls. cotton linters.
———, ———, Santos, 418 bls. cotton linters.
Kauders Steuber & Co., ———, Santos, 699 bls. cotton linters.
———, ———, Santos, 22 bls. linen waste.
Chase National Bank, ———, Santos, 15 bls. woolen waste.
West Texas Cottonoil Co., ———, Santos, 340 bls. cotton linters.
Williamson Products Co., ———, Recife, 38 bls. cotton linters, 37 bls. cotton residue.
Irving Trust Co., ———, Cabedello, 61 bls. cotton residue.
Commercial Natl. Bank Trust Co., ———, Cabedello, 605 bls. cotton linters.

OLD ROPE

W. Steck & Co., ———, Cristobal, 39 bdls.

GLUE STOCK, ETC.

Chase National Bank, ———, Buenos Aires, 12 bls. glue stock.
Weinfeld & Kohen, ———, Vera Cruz, 93 bdls. glue stock.
E. Vadillo, ———, Havana, 89 bls. fleshings.

CASEIN

T. M. Duche & Sons, Inc., ———, Buenos Aires, 834 bags, 50,040 kilos.
Eugenio Lang, ———, Buenos Aires, 834 bags, 50,040 kilos.
H. S. Cramer & Co., Inc., ———, Buenos Aires, 417 bags, 25,020 kilos.
Chase National Bank, ———, Buenos Aires, 834 bags, 50,040 kilos.
Packing Products Co., ———, Buenos Aires, 500 bags, 30,000 kilos.
National City Bank, ———, Buenos Aires, 834 bags, 50,040 kilos.
Casein Co., of America, Inc., ———, Buenos Aires, 935 bags.
American British Chemical Supplies, ———, Buenos Aires, 2,000 bags.
National City Bank, ———, Buenos Aires, 334 bags.
Casein Co. of America, Inc., ———, Buenos Aires, 850 bags.
H. S. Cramer & Co., Inc., ———, Buenos Aires, 835 bags.
American British Chemical Supplies, ———, Buenos Aires, 834 bags, 50,040 kilos.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 31, 1941

———, ———, Durban, 60 bags hide cuttings.

BOSTON IMPORTS

WEEK ENDING MAY 31, 1941

Green Textile Associates, ———, Bombay, 460 bls. cotton waste.

LOS ANGELES IMPORTS

WEEK ENDING MAY 31, 1941

———, ———, Sao Paulo, 3,147 bls. cotton linters.
———, ———, Kobe, 1 cs. rice paper, 5 cs. hanging paper.
———, ———, Tokyo, 1 cs. writing paper.

Ireland Cuts Paper Consumption

WASHINGTON, D. C., June 4, 1941—The Consumption of paper in Ireland was cut drastically in 1940. In the case of newsprint this was necessary, because 40 to 50 per cent of the normal supply was shipped through Baltic ports, the balance being imported from Canada. The position in regard to cardboard was affected by the invasion of Holland, but the Minister of Supplies said last May that about a year's normal supply was in stock. There was a good stock of wood pulp available for mixing with waste paper and rags for the manufacture of wrapping paper in Irish mills. The net selling value of the products of the paper making and stationery in Ireland has been advanced steadily during the past few years, and now amounts to over £1,000,000 per annum. The printing, publishing, and book-binding industry also is important to the country, because it provides employment for about 7,000 persons, produces goods to a net selling value of over £2,500,000, and has a wages and salaries bill of over £1,100,000 per annum.

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CHICAGO	GREENSBORO	PORTLAND, ORE.
PHILADELPHIA	ATLANTA	TORONTO

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NATIONAL N DYES

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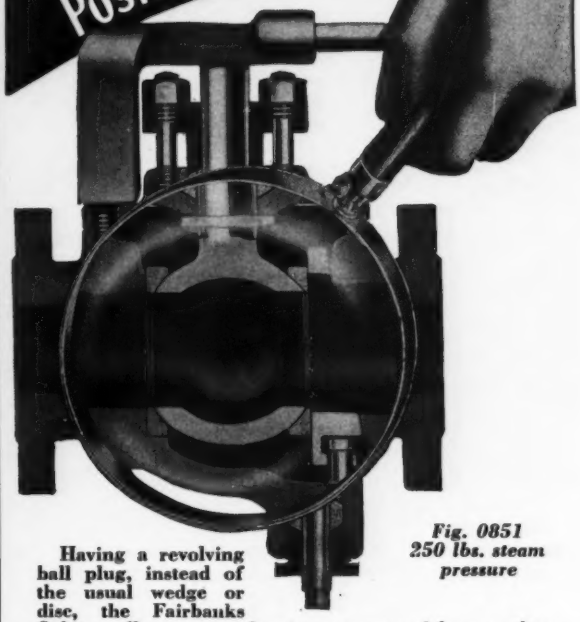

Fig. 0851
250 lbs. steam pressure

Having a revolving ball plug, instead of the usual wedge or disc, the Fairbanks Sphero offers many advantages possessed by no other valve.

It positively eliminates frictional resistance to stream flow, as the round opening in ball plug is the same size as that in the pipe. When the ball plug is opened or closed, it wipes seating surfaces clean. Its shearing action cuts through heavy solids and liquids that would cause ordinary valves to stick and jam. There is nothing on which scale or foreign matter can accumulate.

A positive shut-off is assured as the seat rings form a perfect fit with the ball. A wedge permits adjustment to make the seat rings absolutely pressure tight. And wear on seat rings is reduced to a minimum by the rotary movement of the ball.

A quarter turn of the lever handle opens or closes the valve "as quick as a wink". And you can always be certain that it is fully open or shut tight because is has a positive stop.

When seat rings or other parts become worn, they can be replaced without removing the valve from the line.

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New York Paper and Pulp Market Review

Demand For Paper and Paper Board Continues Heavy — Some Advances In Fine Papers Are Reported But the General Price Situation Remains Unchanged — Pulp Market Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, June 4, 1941.

Demand for paper and paper products continues at a high level and the trend in sales volume in the wholesale market is steadily upward in many grades of paper. Reports from manufacturers' representatives, jobbers, and general paper merchants at this date indicate business is of boom-like proportions and that most manufacturers are having difficulty in supplying their regular customers with the increased quantities of paper now desired. New orders are heavy and backlogs in leading lines of paper and paper board are increasing.

The index of general business activity rose to 128.4% for the week ended May 24, from 127.8% for the preceding week, compared with 104.4% for the corresponding period last year. Paper board production was 0.5% lower.

Paper production for the week ended May 24 was estimated at 100.8%, compared with 92.7% for 1940, with 76.8% for 1939, with 71.4% for 1938, and with 88.9% for the corresponding week for 1937.

Paper board production for the week ended May 24 was 85.0%, compared with 79.0% for 1940, with 66.0% for 1939, with 60.0% for 1938, and with 88.5% for the corresponding week for 1937.

Newsprint prices, as had been expected in the trade, will be unchanged. The International Paper Company announced this week that its domestic newsprint prices of $50 per ton, will be maintained through the third quarter of 1941.

Higher kraft liner board prices are indicated in trade reports this week, that prices will be advanced $5 per ton, effective July 1, and that a price of $60 per ton will probably be maintained for the remainder of this year.

No increase in kraft wrapping paper prices is expected in the trade. The general expectation of increases in many grades of paper for the third quarter of from $5 to $15 per ton, is supported by current reports that some manufacturers may advance prices. One fine paper mill advanced its price ½ cent per pound on its sulphite papers, including papeteries, weddings, greeting card, and embossed papeteries.

Chemical Pulp

Demand for chemical pulp continues active. Mill consumption is at a high level. There is no shortage, however, and no change from current prices are expected in the trade. Rayonier announced this week that its current prices for paper, specialty, and dissolving pulps for the domestic and southern markets will be unchanged for the third quarter.

Rags

Increasing demand for new rags is reported at this date, as mill buying of cotton cuttings in large volume continues. Although considerable pressure is being exerted for higher prices by the heavy demand, the only important advance this week has been on blue overall, currently quoted at from 4.50 to 4.75.

Old Rope and Bagging

Trading in old Manila rope continues active, with mill buying steadily taking available supplies. Prices are unchanged.

Scrap bagging is in strong demand as supplies are limited, and mill consumption of the roofing grades continues at a high level. Prices are unchanged.

Old Waste Paper

Demand for a few grades of paper stock continues heavy at this date. Advances are reported on ordinary hard, No. 1 white shavings, currently quoted at 3.00 and on No. 1 soft white, currently quoted at 2.50. In the lower grades, price advances have been reported on corrugated, currently quoted at .67½, and on No. 1 mixed paper, currently quoted at .52½.

Twine

Sales volume is reported good for many grades of twine. This market is firm and imported fibers are in a strong market position. No important changes in prices have been reported at this date.

Paper Men Play Golf

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 2, 1941—With Butler Smythe, president of J. L. N. Smythe Company, host, the second golf tournament of the season of The Philadelphia Paper and Cordage Association was held at The Philadelphia Cricket Club, Flourtown, Pa., on May 20.

Representatives of various paper mills and houses, forty-two in number, tried their best to win some of the handsome prizes. The W. C. Hamilton trophy was put in competition on this day; the winner last year was Howard Satterthwaite, but this year a new champion was crowned in the person of Mr. Snape of the J. E. Fricke Company, who had one of his good days and shot a marvelous round of golf, finishing up with a net 70, which score won him the Hamilton trophy for this year. Low gross score was tied by the present champion, J. Howard Bancroft of Independent Twine and Yarn Company, and George Hoffner of S. Walters, Inc., at score of 84. The prize for the low gross will be decided when these two players meet at the next golf tournament at the Manufacturers Golf and Country Club, Oreland, Pa., on June 17.

To Be Agents for Florida Pulp Co.

The Trinity Bag and Paper Company, 25 West 43 street, New York City, have been appointed sole selling agents for the Florida Pulp and Paper Company, Pensacola, Fla., and have engaged Homer Lake to handle the output of this mill. Mr. Lake has severed his connection with the Pulp and Paper Trading Company of East 41 street, New York, with whom he had been associated for the past thirty years.

West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

503 Market St.
San Francisco, Cal.

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ENGLISH FINISH SUPERCALENDERED MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

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KRAFT WRAPPING AND KRAFT ENVELOPE
KRAFT LINER BOARD
BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

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Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
Charleston, South Carolina

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JOHN WALDRON
CORPORATION
New Brunswick, New Jersey

To users of these three products in the paper industry Witco gives assurance of quality and uniformity to meet the stiffest requirements. Witco Carbon Blacks are noted for the excellent results they produce in the papers in which they are used. Witco Blanc Fixe has proved its efficiency as an opacifying pigment in paper because of its remarkably pure and uniform white color. Witco clay has a fine, clean color and is especially recommended for use in coated papers. You are invited to send for samples and further information on these products.

WISHNICK-TUMPEER, INC.

Manufacturers WITCO *and Exporters*

New York, 295 Madison Ave. • Boston, 141 Milk St. • Chicago, Tribune Tower Cleveland, 616 St. Clair Ave., N. E. • Dallas, Texas, 610 Dallas National Bank Building • Witco Affiliates: Witco Oil & Gas Company • The Pioneer Asphalt Company • Panhandle Carbon Company • Foreign Office, London, England

BUY DIRECT AND PROFIT DIRECTLY

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, June 4, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER — Quotations on bleaching powder are firm. Demand reported heavy for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, with prices a little higher for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 20 cents per pound; 80-100 mesh, at 20½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 19 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported active. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Market firm. Shipments reported heavy for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $1.89 per 100 pounds, in barrels. Savannah "FF" wood rosin is currently quoted at $1.89 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.57 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and nominal. Demand heavy. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported good for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are more firm and are reported higher for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported active for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$6.00
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.50	"	5.00
Standard Wrapping	4.50	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@	10.75
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	45.00	@	—
Chip	45.00	"	—
Sgl. Mla. Ll. Chip	60.00	"	—
White Pat. Coated	75.00	"	—
Kraft Liners	55.00	"	—
Binders Boards	80.00	"	—

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
100% Rag Ext. No. 1	$39.10@$46.00		$40.25@$47.25
100% Rag	31.05 " 36.50		32.20 " 37.75
85% Rag	.... "		29.90 " 35.00
75% Rag	23.60 " 27.75		24.75 " 29.00
65% Rag	.... "		21.65 " 26.25
50% Rag	17.55 " 21.50		18.70 " 22.75
25% Rag	14.65 " 17.75		15.80 " 19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers
No. 1	$9.35@$11.50		$11.55@$12.75
No. 2	8.50 " 10.25		9.65 " 11.75
No. 3	8.05 " 9.25		9.20 " 11.25
No. 4	7.70 " 9.50		8.90 " 10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered Unbleached Sulphite	61.00	"	64.25
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.75	"	4.15
Kraft No. 1	3.60	"	4.00
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	2.75	"	3.37½
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	6.00	@	6.25
Silesias No. 1	4.25	"	4.50
New Unbleached	6.00	"	6.25
Blue Overall	4.25	"	4.75
Fancy	2.25	"	2.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.10	"	3.35
Miscellaneous	2.35	"	2.65
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.25	"	1.35
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.30	"	1.35
No. 2	1.20	"	1.25
No. 3 (bagging)	.95	"	1.00
No. 4	.90	"	.95
No. 5A	.90	"	.95

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

BERGVIK OCH ALA NYA AKTIEBOLAG
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KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaförden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsvikon, Sweden

Unbleached Sulphite

AKTIESELSKABET GREAKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
SVANÖ AKTIEBOLAG
Svanö, Sweden

Bleached Sulphite

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  Average experience for Orr Felt splicers is twenty years—and the perfect work that is done in this department reflects the wisdom of employing skilled workers. It is close attention, not only to splicing, but to all details of manufacture, that makes Orr Felts the finest that mills can buy.

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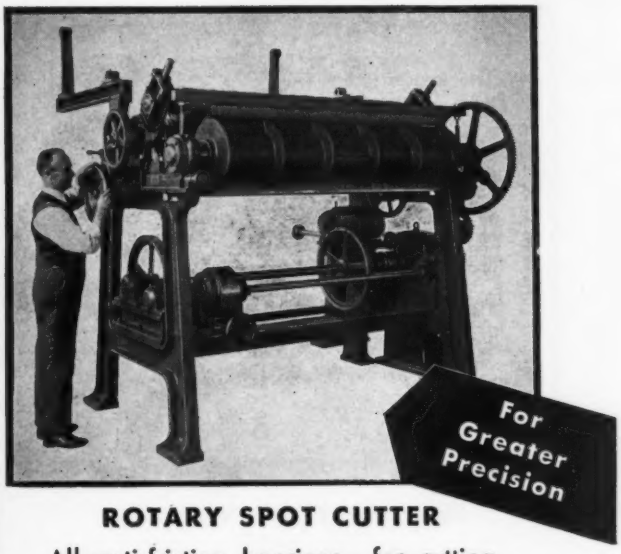

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Manufacturing Company
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English China Clays Sales Corporation
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No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.08	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.15	@	4.25
Wool Tares, light....	2.50	"	2.75
Wool Tares, heavy..	2.50	"	2.75
Bright Bagging.....	3.15	"	3.30
Manila Rope—			
Foreign	5.50	"	5.75
Domestic	5.50	"	5.75
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.75	"	3.00
Soft White No. 1..	2.35	"	2.50
Soft White Extra..	2.70	"	2.85
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book....	.90	"	.95
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.65	"	1.75
Ledger Stock Colored	1.20	"	1.30
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.80	"	1.90
Old Kraft Machine Compressed bales..	1.35	"	1.50
News—			
No. 1 White News	1.50	"	1.60
Strictly Overissue..	.96	"	1.00
Strictly Folded....	.60	"	.65
Corrugated	.67½	"	—
No. 1 Mixed Paper..	.52½	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.19½	@	—
White Hemp	.19½	"	—
Fine Polished—			
Fine India.....	.22½	"	—
Unpolished—			
Box	.15¾	"	—
Paper Makers.....	.15½	"	—
Tube Rope.....	.16¾	"	—
Wall Paper.....	.19½	"	—
Wrapping	.19½	"	—
Soft Fiber Rope...	.17½	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.12	"	—
Mex. Sisal.....	.11	"	—
Manila	.25	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06½	@	.06¾
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1.....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06¼	"	.06½
Washable Prints..	.02½	"	.03
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales....	.03	"	.03¼
New Black Soft....	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.02	"	.02¼
Corduroy	.01¼	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	Nominal		
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.30	"	1.35
Domestic No. 2...	1.10	"	1.15
Roofing Bagging..	1.00	"	1.05

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	3.25	@	3.75
Domestic	3.00	"	3.25
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	3.00	"	3.25
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.25	"	3.50

Old Papers

(F. o. b. Phila.)

Shavings—			
Hard White Special	2.50	@	2.70
Hard White.....	2.35	"	2.40
No. 1 Soft White..	1.90	"	2.00
No. 2 White.....	1.70	"	1.85
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.25	"	1.30
No. 1 Books, heavy..	.95	"	1.00
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.60	"	.65
Container Manila....	.50	"	.55
Kraft Paper	1.40	"	1.45
No. 1 Mixed Paper..	.45	"	.50
Straw Board Chip...	.45	"	.50
Binders Board Chip..	.35	"	.40
Corrugated Board...	.65	"	.70
Overissue News.....	.85	"	.90
Old Newspapers.....	.60	"	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.15	@	3.25
No. 1 Soft White	2.50	"	2.75
No. 2 Mixed.....	.90	"	1.00
Solid Ledger Books..	2.00	"	2.10
Overissue Ledger Stock	1.75	"	2.00
White Ledger Stocks	1.50	"	1.65
Mixed Ledgers	1.25	"	—
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock.....	1.15	"	1.20
Manila Env. Cuttings	3.00	"	3.25
Manila Envelope Cuttings, extra quality	2.65	"	2.75
White Blank News..	1.70	"	1.80
No. 1 Kraft.....	1.35	"	1.45
Extra No. 1 Kraft..	1.75	"	—
Mixed Papers.....	.45	"	—
Print Manila	.60	"	.65
Container Manila....	.60	"	.70
Old Newspapers.....	.52½	"	.57½
Paper Wool Strings.	.95	"	1.15
Overissue News.....	.65	"	.70
Box Board Chips....	.35	"	—
Corrugated boxes....	.65	"	.75
Kraft corrugated boxes	1.20	"	1.30
New Kraft Corrugated Cuttings	1.75	"	2.00
Screening Wrappers.	.85	"	.90

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.75	@	4.00
Sisal Rope	2.60	"	2.75
Mixed Rope	.85	"	1.00
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Soft Jute Rope.....	4.25	"	4.75
Manila Rope—			
Foreign .....(nominal)			
Domestic	5.75	"	6.00
Jute Carpet Threads.	3.00	"	3.25
Bleachery Burlap....	5.00	"	5.50
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.25	"	3.75
Scrap Sisal.....	2.75	"	3.00
Scrap Sisal for Shredding	2.75	"	2.90
Wool Tares—			
Foreign	(nominal)		
Domestic	2.85	"	3.00
Aust. Wool Pouches.	3.50	"	3.75
New Burlap Cuttings	4.00	"	4.25
Heavy baling bagging	3.25	"	3.50
Paper Mill Bagging..	2.75	"	3.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.03¾	"	4.00
New White No. 1.	.06	"	.06¼
New Light Flannelettes	.03¾	"	4.00
Canton Flannel, Bleached	.06	"	—
Underwear Cutters, Bleached	.06¼	"	.06½
Silesias No. 1.....	.04	"	.04¼
New Black Silesias..	4.00	"	—
Red Cotton Cuttings	.04	"	.05
Soft Unbleached....	.06	"	.06¼
Blue Cheviots.....	.04¼	"	.04½
Fancy	.01½	"	.01¾
Washable	.01½	"	.01¾
Cottons—According to Grades—			
Blue Overalls.....	.04	"	.04¼
New Black, Soft..	.03	@	.03¼
Khaki Cuttings.....	.02	"	.02¼
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.02	"	—
New Canvas.....	.05¼	"	—
B. V. D. Cuttings...	.06	"	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.00
Miscellaneous	2.00	"	2.25
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.25	"	—
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.25
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas .....(nominal)	
Dark Cottons.....(nominal)	
Dutch Blues.....(nominal)	
New Checks and Blues(nominal)	
Old Fustians.....(nominal)	
Old Linsey Garments.(nominal)	
New Silesias.....(nominal)	

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.83	"	—
Blanks	1.45	"	—
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	.60	"	—
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.45	"	—
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

Employers Urged to Report

ALBANY, N. Y., May 26, 1941—Employers were urged today to cooperate wholeheartedly with the Division of Placement and Unemployment Insurance in administering the "voluntary quit" amendment of the Unemployment Insurance Law, which provides a six-week disqualification period, in addition to the normal three-week waiting period, for all those who leave their jobs of their own volition without good cause.

"Effective administration of this new provision in the Law will depend to a large extent upon the prompt cooperation of employers in complying with regulations of the Industrial Commissioner for the reporting of circumstances surrounding a person's separation from the payroll which may lead to disqualification," said Milton O. Loysen, executive director of the division.

"If employers cooperate and return these reports promptly, the claimant will be immediately disqualified, if it is shown that he quit of his own volition 'without good cause.' Inasmuch as each local office will determine whether or not the claimant is or is not a 'voluntary quit', it is of paramount importance that employers give wholehearted cooperation in this respect."

Mr. Loysen pointed out that there is ample space on the report form now in use to inform the Division as to the exact reason why an employee was separated from the payroll. "This form was changed a short time ago with the explicit purpose of facilitating the furnishing of pertinent information to the Division," said Mr. Loysen. "I sincerely hope that employers will not force upon themselves a compulsory reporting of all payroll preparations and accessions by failing to cooperate."